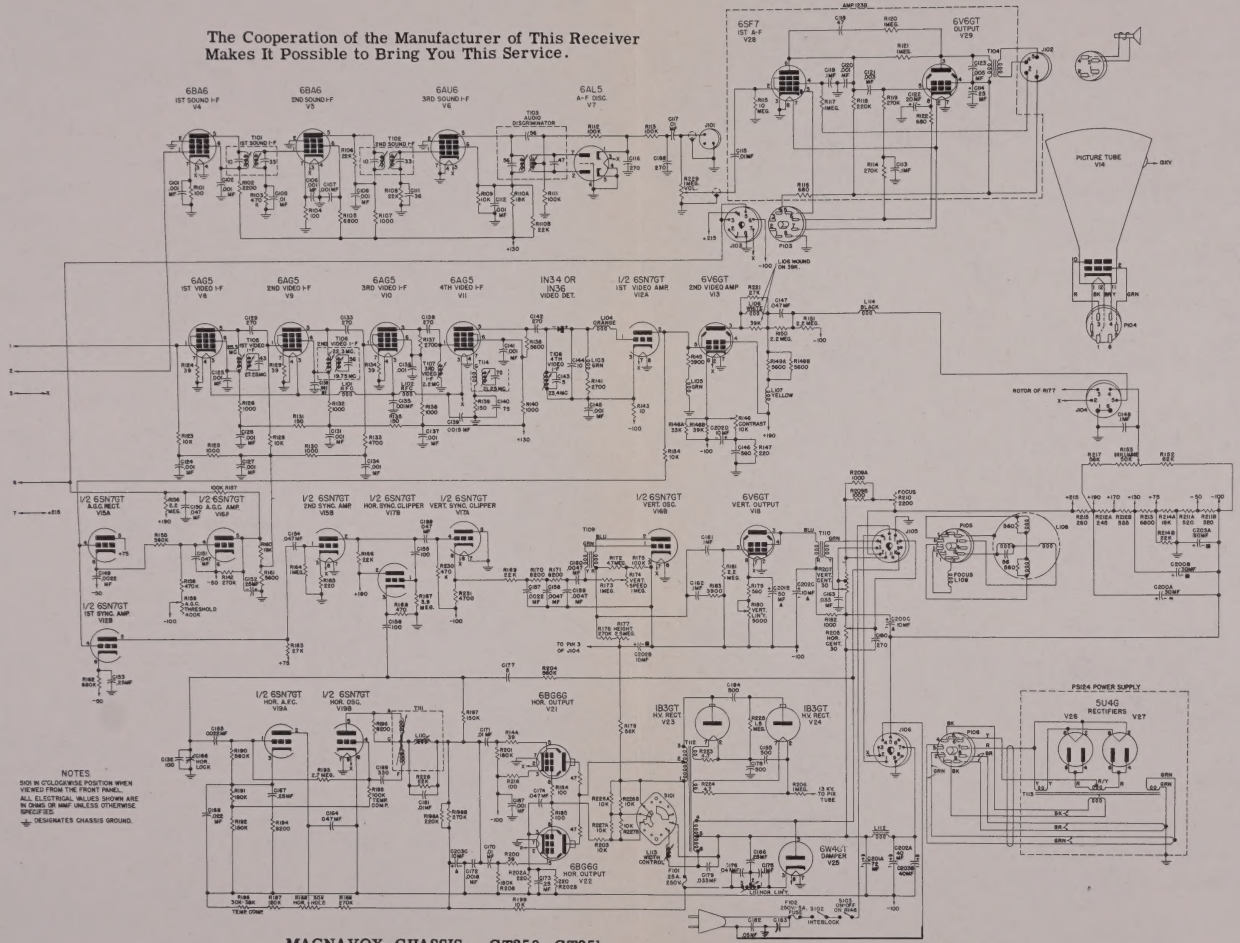
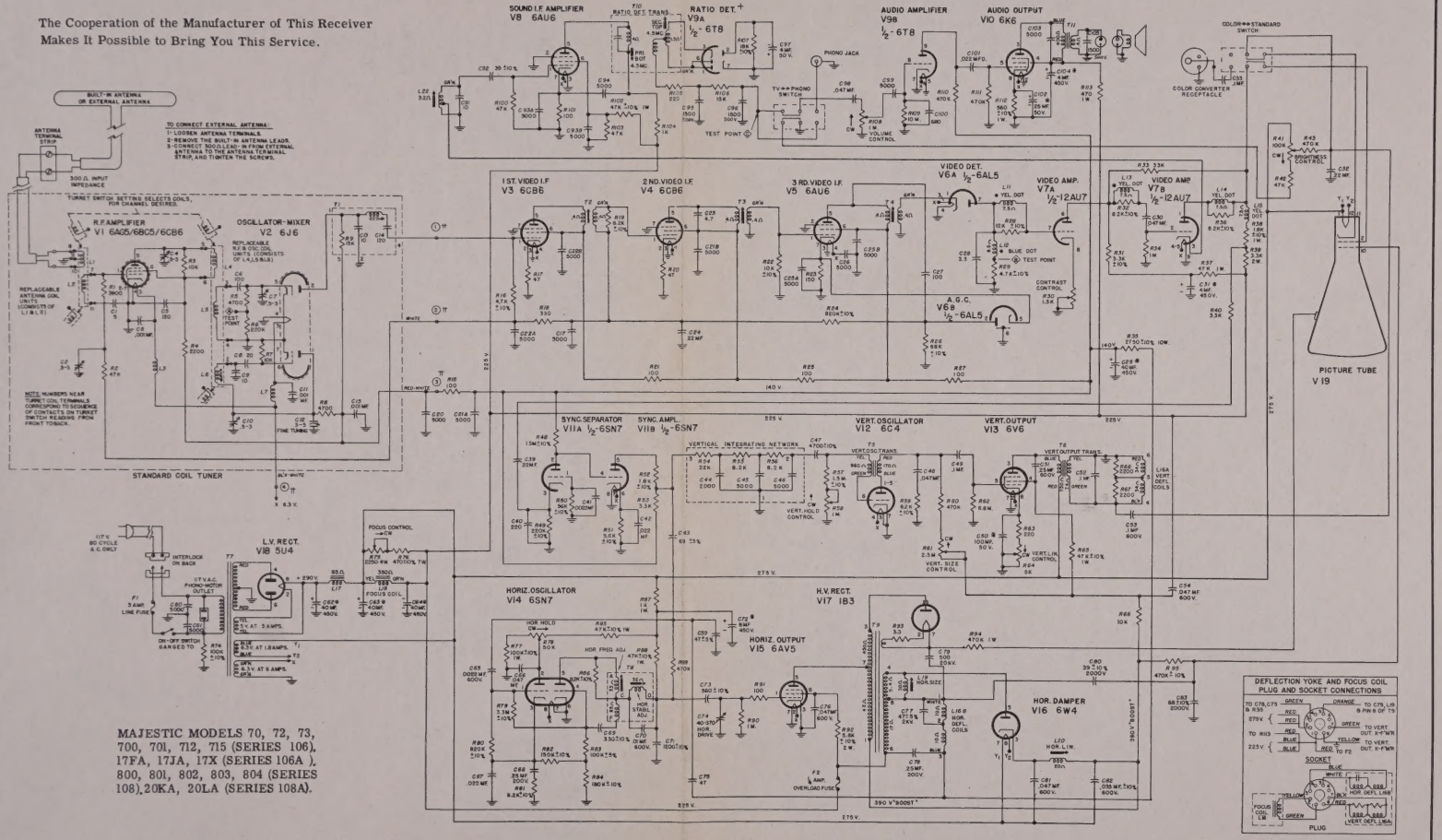
The Cooperation of the Manufacturer of This Receiver
Makes It Possible to Bring You This Service.



MAGNAVOX CHASSIS CT250, CT251

MAJESTIC MODELS 17FA, 17JA, 17X, 20KA, 20LA, 70, 72, 73, 700, 701, 712, 715, 800, 801, 802, 803, 804.

The Cooperation of the Manufacturer of This Receiver Makes It Possible to Bring You This Service.


SOUND I.F. AMPLIFIER V8 6AU6
RATIO DET. V9A 1/2-6T8
AUDIO AMPLIFIER V9B 1/2-6T8
AUDIO OUTPUT V10 6K6
1ST. VIDEO I.F. V3 6CB6
2ND. VIDEO I.F. V4 6CB6
3RD. VIDEO I.F. V5 6AU6
VIDEO DET. V6A 1/2-6AL5
VIDEO AMP. V7A 1/2-12AU7
VIDEO AMP. V7B 1/2-12AU7
A.G.C. V6B 1/2-6AL5
R.F. AMPLIFIER V1 6AG5/6BC5/6CB6
OSCILLATOR-MIXER V2 6J6
STANDARD COIL TUNER
SYNC. SEPARATOR V11A 1/2-6SN7
SYNC. AMPL. V11B 1/2-6SN7
VERT. OSCILLATOR V12 6C4
VERT. OUTPUT V13 6V6
L.V. RECT. V8 5U4
HORIZ. OSCILLATOR V14 6SN7
H.V. RECT. V17 1B3
HORIZ. OUTPUT V15 6AV5
HOR. DAMPER V16 6W4
PICTURE TUBE V19
DEFLECTION YOKE AND FOCUS COIL PLUG AND SOCKET CONNECTIONS
PLUG
SOCKET

MAJESTIC MODELS 70, 72, 73, 700, 701, 712, 715 (SERIES 106), 17FA, 17JA, 17X (SERIES 106A), 800, 801, 802, 803, 804 (SERIES 108), 20KA, 20LA (SERIES 108A).

PRELIMINARY DATA
The data contained in this folder is published in advance of regular PHOTOFACT Coverage

SET 135 FOLDER 1A

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PHOTOFACT* Folder

ADMIRAL CHASSIS 21F1, 21G1, 21K1, 21L1, 21P1, 21Q1

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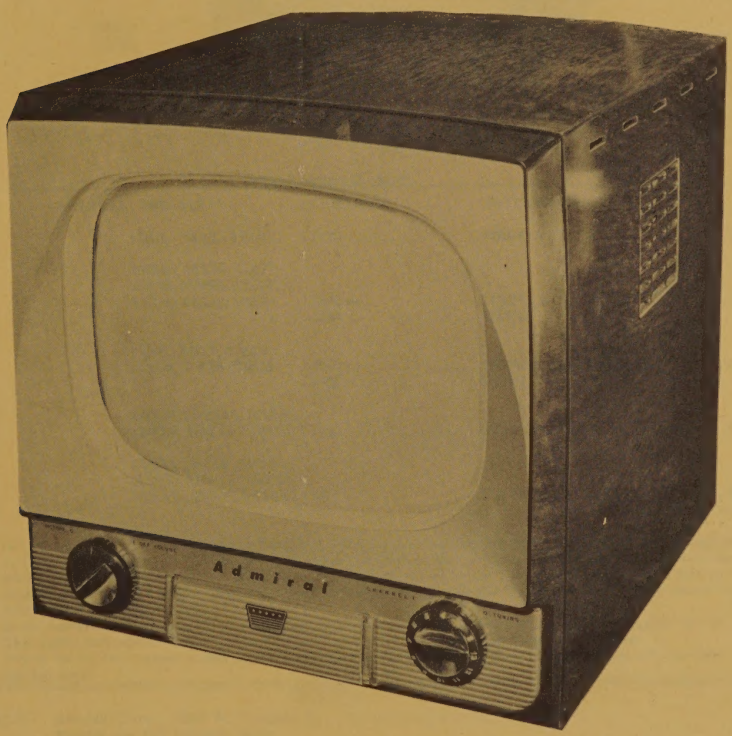

MODEL 17K2

ADMIRAL CHASSIS 21F1, 21G1, 21K1, 21L1, 21P1, 21Q1

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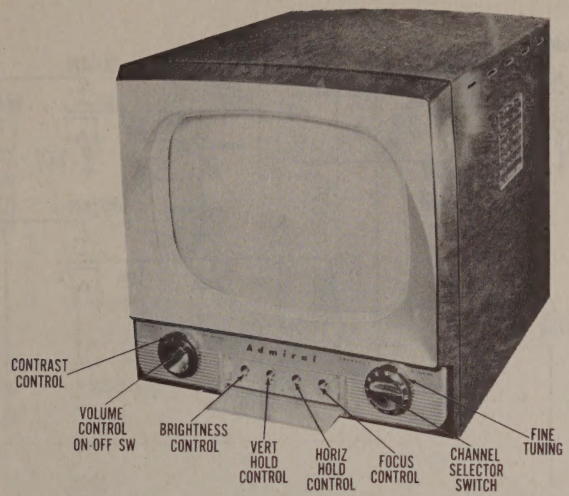
DATE 6-51 SET 135 FOLDER 2

ADMIRAL CHASSIS 21F1, 21G1, 21K1, 21L1, 21P1, 21Q1



ADMIRAL MODEL 17K12

TRADE NAME	ADMIRAL, MODELS	TV CHASSIS	PICTURE TUBE	TYPE
	17K11, 17K12, 27K12	21F1	17BP4 or 17RP4	TV Only
	27K15, 27K16, 27K17, 27K25, 27K26, 27K27, 27K35, 27K36, 27K46	21F1 or 21P1	17BP4 or 17RP4 17CP4	TV Only
	37K15, 37K16, 37K27, 37K28, 37K35, 37K36	21G1 or 21Q1	17BP4 or 17RP4 17CP4	TV-Radio - Phono
	221K16, 221K16A, 221K26, 221K28, 221K35, 221K36	21K1	20CP4 or 20DP4	TV Only
	321K15, 321K16, 321K18, 321K27, 321K35, 321K36, 321K46, 321K47, 321K49	21L1	20CP4 or 20DP4	TV-Radio -Phono

NOTE: 1. All the models listed above contain the letter "K". In combination receivers, the letter "K" designates the use of Radio Chassis 3C1 (AM Only). A receiver employing Radio Chassis 5D2 (AM-FM) will have the same model number except the letter "K" will be replaced by the letter "F". For example, Model 37K15 is a combination receiver with a "AM Only" radio chassis, while a Model 37F15 would be a combination receiver with "AM-FM" radio chassis.

2. Some receivers employing 17" picture tubes will have model numbers with the suffix letter "A" or "B". This suffix indicates a difference in type picture window and / or control panel employed.

3. Any of the models numbers may have an additional suffix letter "N" which does not have any service significance.

INDEX

MANUFACTURER	Admiral Corp., 3800 W. Cortland St., Chicago (47), Illinois
TUBES	Twenty One (TV Chassis Only)
POWER SUPPLY	110 - 120 Volts AC - 60 Cycle RATING 1.65 Amp. @ 117 Volts AC (TV Operation)
TUNING RANGE	Channels 2 thru 13

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FOR SERVICE INFORMATION ON: RADIO CHASSIS 3C1 - SEE PHOTOFACT FOLDER # 2 - SET #117.
RADIO CHASSIS 5D2 - SEE PHOTOFACT FOLDER # 2 - SET #118.

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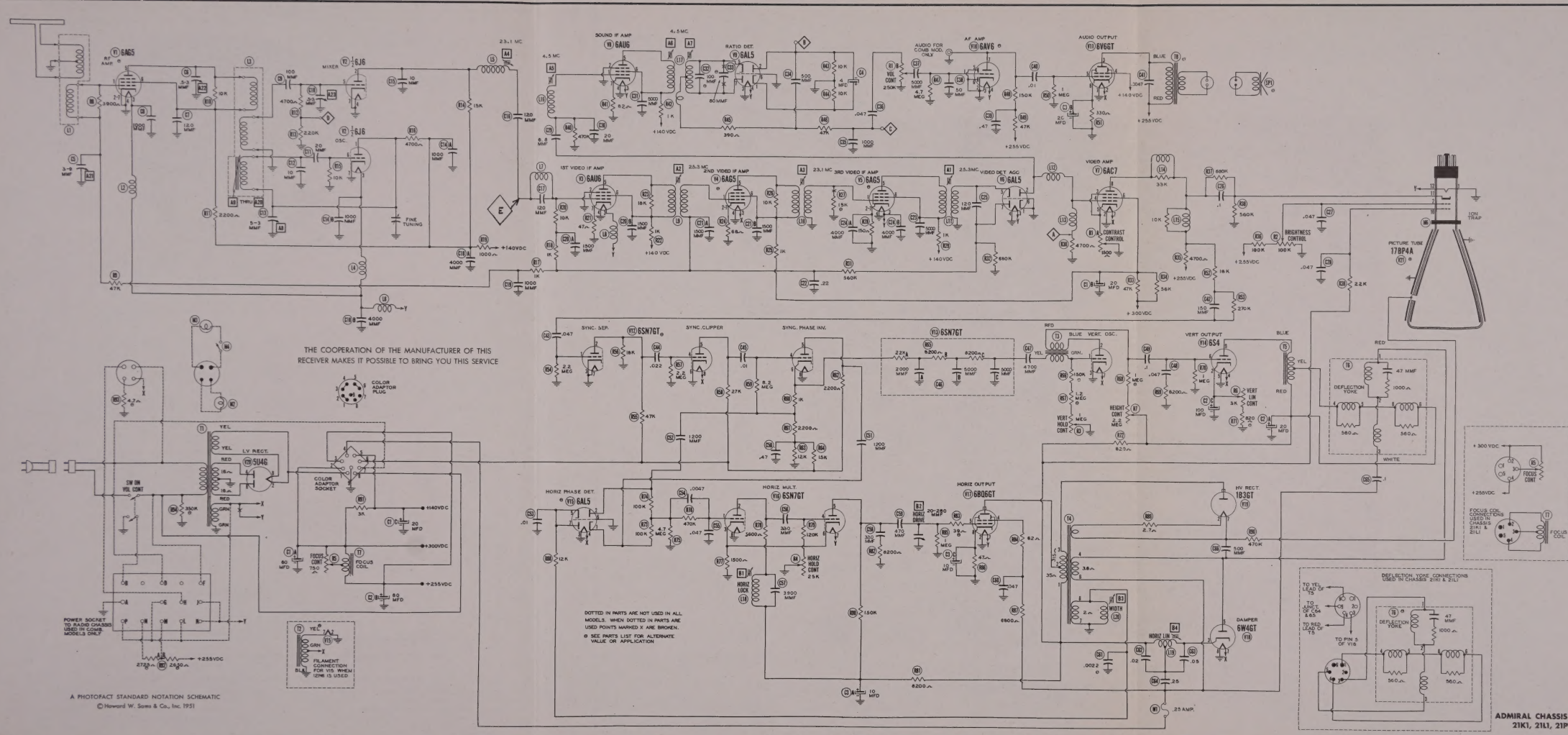
ADMIRAL CHASSIS 21F1, 21G1, 21K1, 21L1, 21P1, 21Q1


THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE
COLOR ADAPTOR PLUG
COLOR ADAPTOR SOCKET
SW ON VOL CONT
POWER SOCKET TO RADIO CHASSIS USED IN CONSOLE MODELS ONLY
FILAMENT CONNECTION FOR V15 WHEN 12W6 IS USED
DOTTED IN PARTS ARE NOT USED IN ALL MODELS. WHEN DOTTED IN PARTS ARE USED POINTS MARKED X ARE BROKEN.
⊘ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION
A PHOTOFACT STANDARD NOTATION SCHEMATIC
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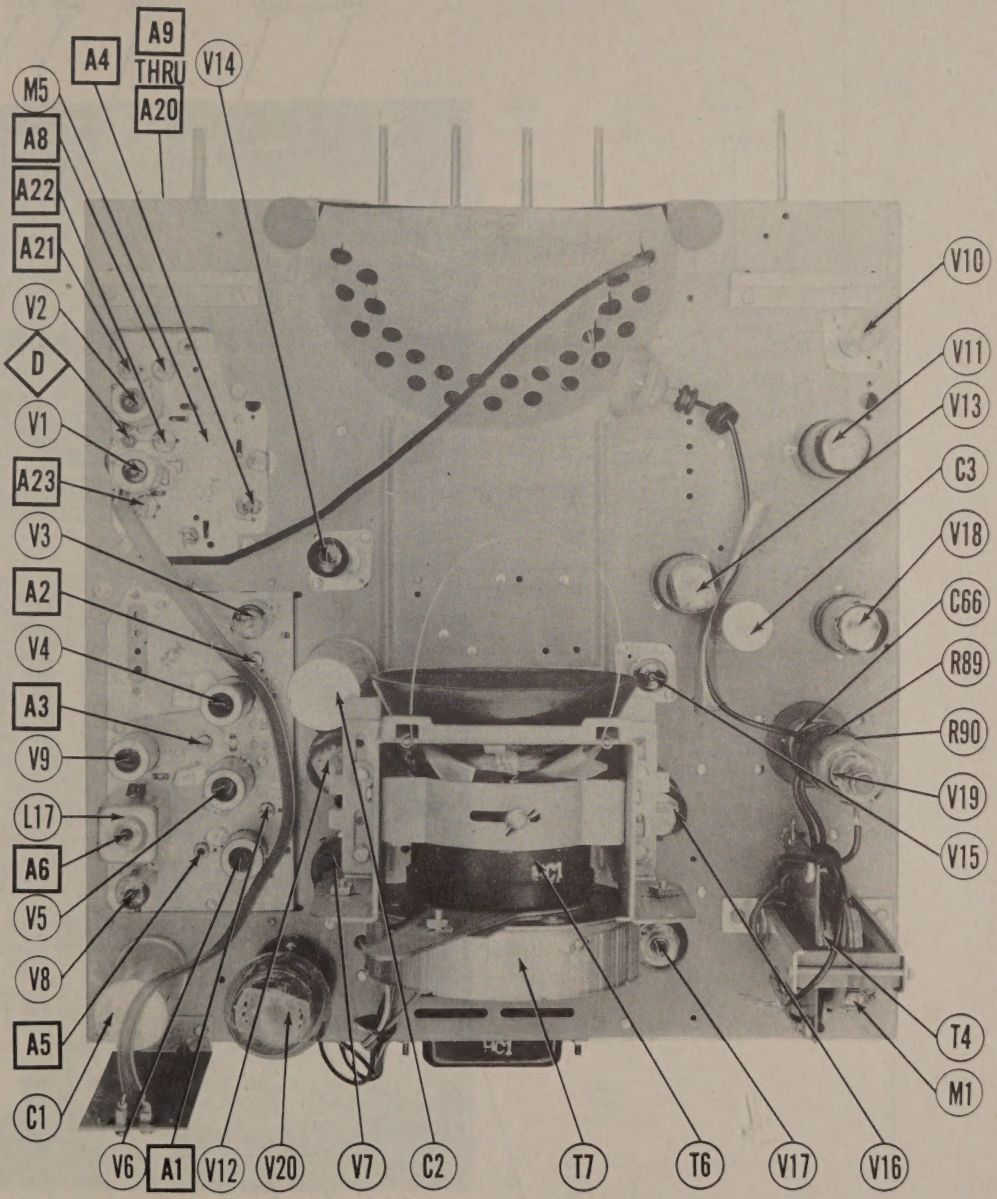
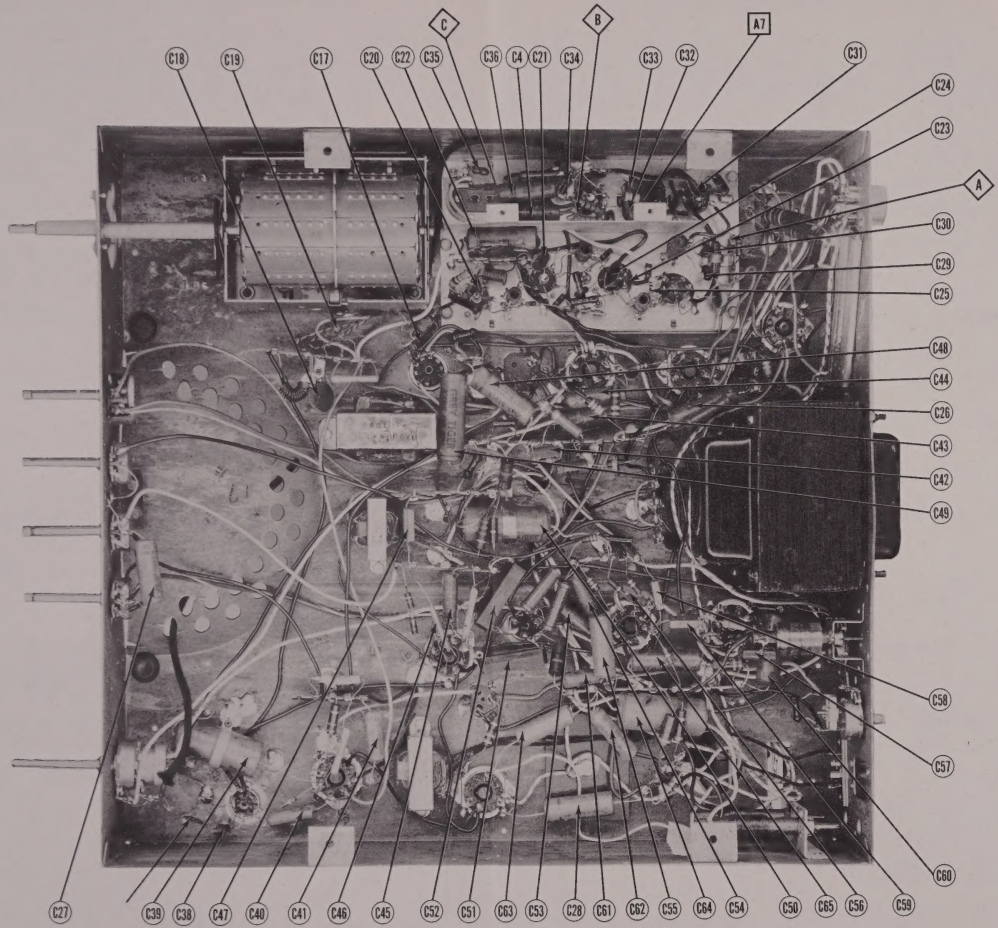
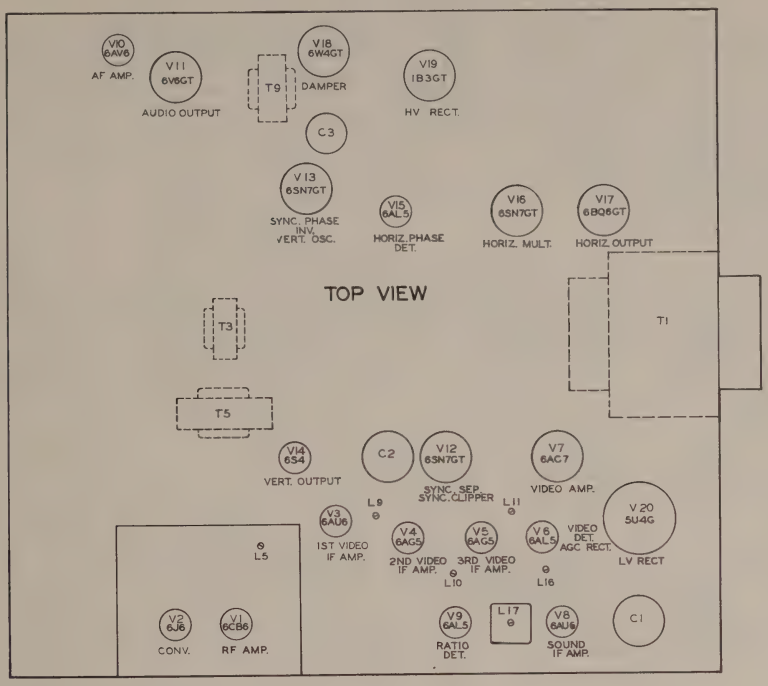
DEFLECTION YOKE CONNECTIONS USED IN CHASSIS 21K1 & 21L1
ADMIRAL CHASSIS 21F1, 21G1, 21K1, 21L1, 21P1, 21Q1

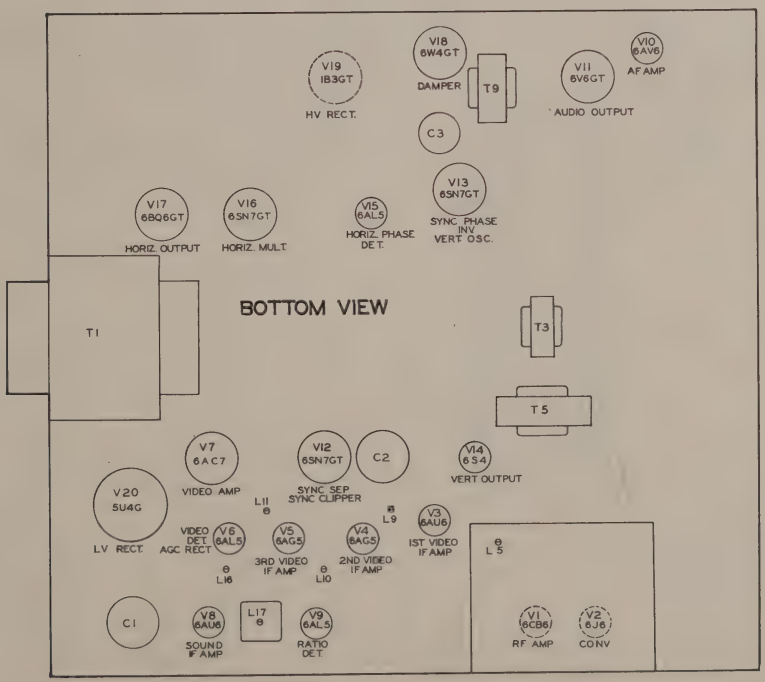


CHASSIS TOP VIEW



CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION





TUBE PLACEMENT CHART

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The end of the high voltage lead should be securely taped and kept away from the chassis. Do not remove the horizontal oscillator tube to disable the high voltage.

VIDEO IF ALIGNMENT

Remove the converter tube, (V2), and replace it with a 6J6 which has Pin 1 removed, this will disable the local oscillator and prevent the possibility of erroneous indications.

Connect the negative lead of a 1 1/2 volt battery to the junction of R31 and C22. Connect the positive lead to chassis.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to an ungrounded tube shield floating over dummy converter tube (V2). Low side to chassis.	25.3MC (Unmod.)	Any	DC probe to Point (A). Common to chassis.	A1, A2	Adjust for maximum deflection.
2.	"	"	23.1MC	"	"	A3, A4	"

OVERALL VIDEO IF RESPONSE CHECK

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
3.	Direct	High side to an ungrounded tube shield floating over dummy converter tube (V2). Low side to chassis.	24MC (10MC SWP)	21.25MC 22MC 24.3MC 25.75MC	Any	Vert. amp. to Point (A). Low side to chassis.		Check for response curve similar to figure 1. If necessary retouch A1 thru A4 for proper response.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
4.	.01MFD	High side to Point A. Low side to chassis.	4.5MC (Unmod.)	Any	DC probe to Point (B). Common to chassis.	A5, A6	Adjust for maximum deflection.
5.	"	"	"	"	DC probe to Point (C). Common to chassis.	A7	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60% modulation and 450KC sweep. Use 120% sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
4.	.01MFD	High side to Point A. Low side to chassis.	4.5MC (450KC SWP)	4.5MC	Any	Vert. amp. to Point (B). Low side to chassis.	A5, A6	Disconnect stabilizer capacitor C4. Adjust for maximum amplitude and symmetry as per figure 2.
5.	"	"	"	"	"	Vert. amp. to Point (C). Low side to chassis.	A7	Reconnect capacitor C4. Adjust A7 so 4.5MC occurs at center of crossover lines as per figure 3. SLIGHTLY retouch A6 for maximum amplitude and straightness of crossover lines.

OSCILLATOR ALIGNMENT

Remove the dummy converter tube and replace the original 6J6 in its socket.

Complete oscillator alignment may not be necessary. If the oscillator seems to be off-frequency for a majority of the channels it may be possible to correct them in one step, using A8. It should be noted that this is an all-channel oscillator circuit adjustment and should not be adjusted for any individual channel. If adjustment of A8 will not bring all channels well within the range of the fine tuning control it will be necessary to adjust the channel strip adjustment for each channel that is off frequency. The channel strip adjustments are reached through a hole just to the right of the channel switch shaft. The correct adjustment screw is accessible through this hole as the channel switch is turned to each channel.

The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
6.	Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	213MC (10MC SWP)	211.25MC 215.75MC	13	Vert. amp to Point (A). Low side to chassis.	A9	Adjust to place sound marker as shown in figure 4. The video marker should be at 50%.
			207MC (10MC SWP)	205.25MC 209.75MC	12		A10	
			201MC (10MC SWP)	199.25MC 203.75MC	11		A11	
			195MC (10MC SWP)	193.25MC 197.75MC	10		A12	
			189MC (10MC SWP)	187.25MC 191.75MC	9		A13	
			183MC (10MC SWP)	181.25MC 185.75MC	8		A14	
			177MC (10MC SWP)	175.25MC 179.75MC	7		A15	
			85MC (10MC SWP)	83.25MC 87.75MC	6		A16	
			79MC (10MC SWP)	77.25MC 81.75MC	5		A17	
			69MC (10MC SWP)	67.25MC 71.75MC	4		A18	
			63MC (10MC SWP)	61.25MC 65.75MC	3		A19	
			57MC (10MC SWP)	55.25MC 59.75MC	2		A20	

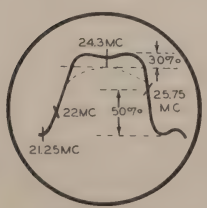


FIG. 1

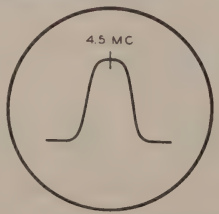


FIG. 2

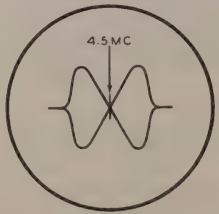


FIG. 3

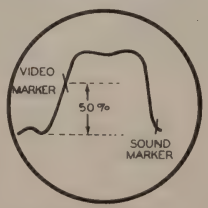


FIG. 4

ALIGNMENT INSTRUCTIONS (CONT.)

RF AND MIXER ALIGNMENT

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
7.	Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	207MC (10MC SWP)	205.25MC 209.75MC	12	Vert. amp. thru 10KΩ to Point ⊕. Low side to chassis.	A21, A22, A23	Adjust for response curve similar to figure 5 with markers above 90%.
8.	"	"	213MC (10MC SWP)	211.25MC 215.75MC	13	"		Check all channels for response similar to figure 5. If markers fall below 70% on any channel make slight adjustments of A21, A22 and A23 with channel switch set for that channel. Recheck all channels to see that they have not been seriously effected.
			201MC (10MC SWP)	199.25MC 203.75MC	11			
			195MC (10MC SWP)	193.25MC 197.75MC	10			
			189MC (10MC SWP)	187.25MC 191.75MC	9			
			183MC (10MC SWP)	181.25MC 185.75MC	8			
			177MC (10MC SWP)	175.25MC 179.75MC	7			
			85MC (10MC SWP)	83.25MC 87.75MC	6			
			79MC (10MC SWP)	77.25MC 81.75MC	5			
			69MC (10MC SWP)	67.25MC 71.75MC	4			
			63MC (10MC SWP)	61.25MC 65.75MC	3			
			57MC (10MC SWP)	55.25MC 59.75MC	2			

FIG.5

VOLTAGE AND RESISTANCE MEASUREMENTS

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6CB6	-.4VDC	0V‡†	6.3VAC	0V	90VDC	90VDC	0V		
V 2	6J6	75VDC	70VDC	6.3VAC	0V	-1.2VDC	‡-2.8VDC	0V		
V 3	6AU6	-.4VDC	0V	6.3VAC	0V	125VDC	125VDC	.2VDC		
V 4	6AG5	-.4VDC	.3VDC	6.3VAC	0V	115VDC	115VDC	.3VDC		
V 5	6AG5	0V	1.2VDC	6.3VAC	0V	125VDC	125VDC	1.2VDC		
V 6	6AL5	0V	-.4VDC	6.3VAC	0V	0V	0V	-1VDC		
V 7	6AC7	0V	0V	2.4VDC	-.4VDC	2.4VDC	130VDC	6.3VAC	255VDC	
V 8	6AU6	-.8VDC	0V	6.3VAC	0V	125VDC	125VDC	.8VDC		
V 9	6AL5	.3VDC	-.3VDC	0V	6.3VAC	0V	0V	0V		
V 10	6AV6	-.4VDC	0V	0V	6.3VAC	0V	0V	105VDC		
V 11	6V6GT	0V	6.3VAC	260VDC	140VDC	0V	220VDC	0V		
V 12	6SN7GT	-2.2VDC	28VDC	0V	-.9VDC	80VDC	0V	0V	6.3VAC	
V 13	6SN7GT	-10VDC -33VDC	240VDC 70VDC	0V	1 6VDC	130VDC	60VDC	6.3VAC	0V	
V 14	6S4	0V	6VDC 2.2VDC	0V	6.3VAC	0V	0V	0V	0V	400VDC 370VDC
V 15	6AL5	4.2VDC	-4.2VDC	0V	6.3VAC	.1VDC	0V	.1VDC		
V 16	6SN7GT	0V	305VDC	12VDC	-5.3VDC -6.2VDC	165VDC	12VDC	6.3VAC	0V	
V 17	6BQ6GT	-18VDC	0V	0V	170VDC	-18VDC	305VDC	6.3VAC	5.6VDC	TOP CAP *
V 18	6W4GT	0V	0V	415VDC	0V	260VDC	0V	6.3VAC	0V	
V 19	1B3GT	* DO NOT MEASURE								
V 20	5U4G	0V	300VDC	0V	300VAC	0V	300VAC	135VDC	300VDC	
V 21	17BP4A	0V	125VDC 0V	PIN 10 410VDC	PIN 11 105VDC	PIN 12 6.3VAC				

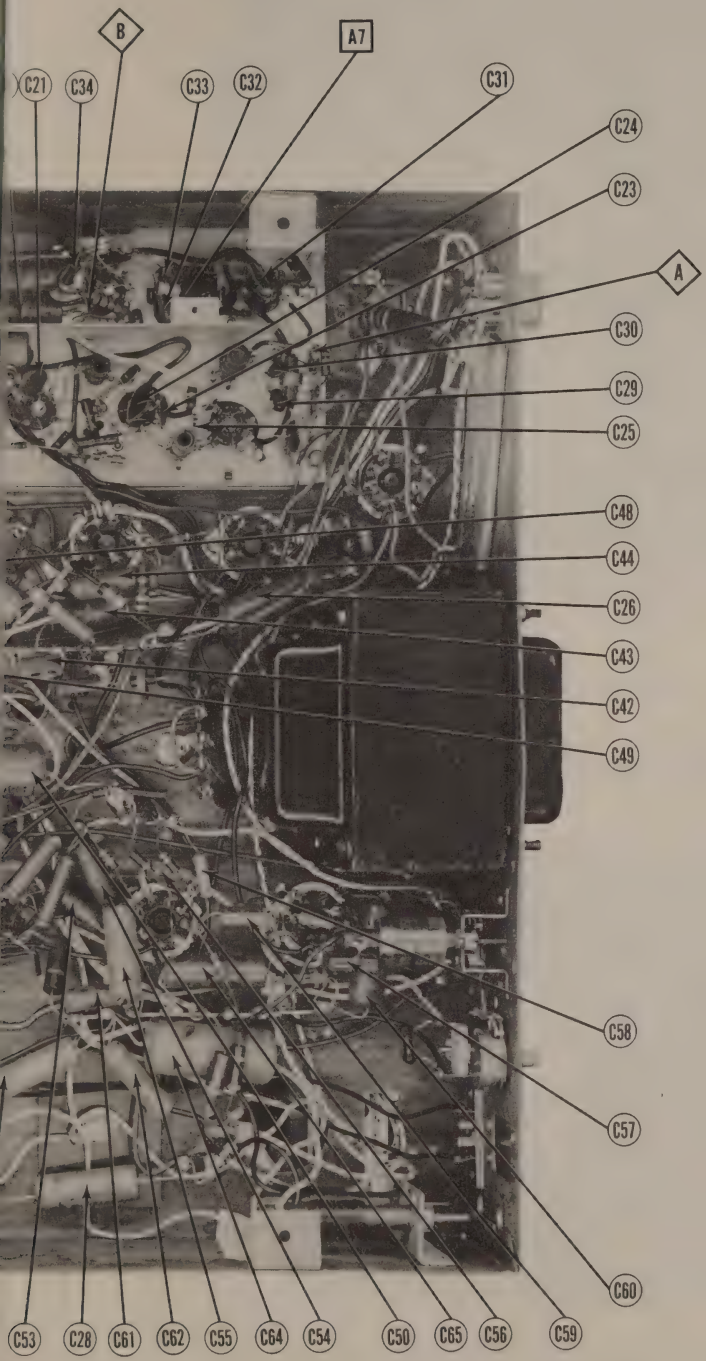
ALL MEASUREMENTS TAKEN WITH PICTURE TUBE REMOVED
FOCUS CONTROL FULLY COUNTER CLOCKWISE
‡ TAKEN WITH VACUUM TUBE VOLTMETER
* DO NOT MEASURE

RESISTANCE READINGS

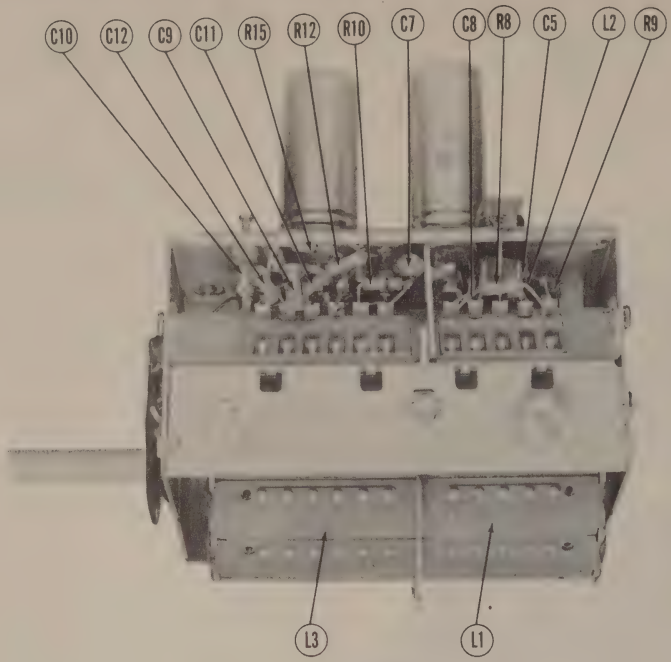
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6CB6	1.2Meg	0Ω	.1Ω	0Ω	†6.2KΩ	†6.2KΩ	0Ω		
V 2	6J6	†8.7KΩ	†19KΩ	.1Ω	0Ω	225KΩ	10KΩ	0Ω		
V 3	6AU6	1.2Meg	0Ω	.1Ω	0Ω	†4KΩ	†4KΩ	47Ω		
V 4	6AG5	1.2Meg	68Ω	.1Ω	0Ω	†25KΩ	†25KΩ	68Ω		
V 5	6AG5	.5Ω	150Ω	.1Ω	0Ω	†4KΩ	†4KΩ	150Ω		
V 6	6AL5	0Ω	4.7KΩ	.1Ω	0Ω	.5Ω	0Ω	680KΩ		
V 7	6AC7	0Ω	0Ω	1.5KΩ	4.7KΩ	1.5KΩ	†24KΩ	.1Ω	†5KΩ	
V 8	6AU6	470KΩ	0Ω	.1Ω	0Ω	†4KΩ	†4KΩ	82Ω		
V 9	6AL5	10KΩ	10KΩ	0Ω	.1Ω	Inf.	0Ω	Inf.		
V 10	6AV6	4.7Meg	0Ω	0Ω	.1Ω	0Ω	0Ω	†200KΩ		
V 11	6V6GT	Inf.	.1Ω	† 530Ω	†3KΩ	1Meg	†50KΩ	0Ω	330Ω	
V 12	6SN7GT	2.2Meg	†27KΩ	0Ω	2.2Meg	†30KΩ	0Ω	0Ω	.1Ω	
V 13	6SN7GT	1.3Meg 2.3Meg	#1Meg #3.5Meg	0Ω	8.2Meg	†5.2KΩ	12KΩ	.1Ω	0Ω	
V 14	6S4	Inf.	3.8KΩ 820Ω	1Meg	.1Ω	0Ω	1Meg	Inf.	Inf.	#2.2KΩ
V 15	6AL5	4.8Meg	4.8Meg	0Ω	.1Ω	12KΩ	0Ω	12KΩ		
V 16	6SN7GT	5.2Meg	#14KΩ	1.5KΩ	120KΩ 145KΩ	#160KΩ	1.5KΩ	.1Ω	0Ω	
V 17	6BQ6GT	1Meg	0Ω	Inf.	†7KΩ	1Meg	#14KΩ	.1Ω	47Ω	TOP CAP #55Ω
V 18	6W4GT	Inf.	Inf.	1Meg	Inf.	†275Ω	Inf.	.1Ω	0Ω	
V 19	1B3GT	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	TOP CAP #470Ω
V 20	5U4G	Inf.	25KΩ	Inf.	16Ω	Inf.	16Ω	†3KΩ	25KΩ	
V 21	17BP4A	0Ω	50KΩ 0Ω	PIN 10 #22KΩ	PIN 11 350KΩ	PIN 12 .1Ω				

ALL MEASUREMENTS TAKEN WITH PICTURE TUBE REMOVED
FOCUS CONTROL FULLY COUNTER CLOCKWISE
† MEASURED FROM PIN 2 OF V20
# MEASURED FROM PIN 3 OF V18

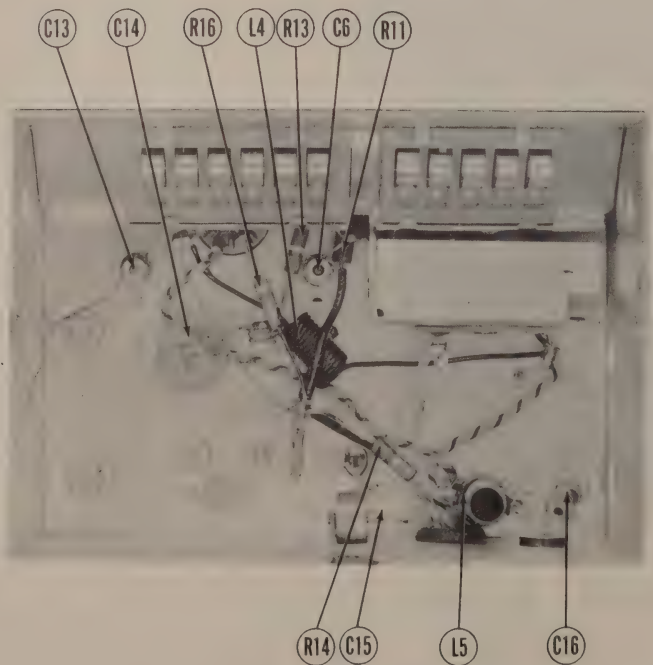
1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltage measured at 1,000 ohms.
2. Pin numbers are counted in a clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. Front panels controls set at minimum.
6. Where readings may vary according to the setting of the service controls, both minimum and maximum readings are given.



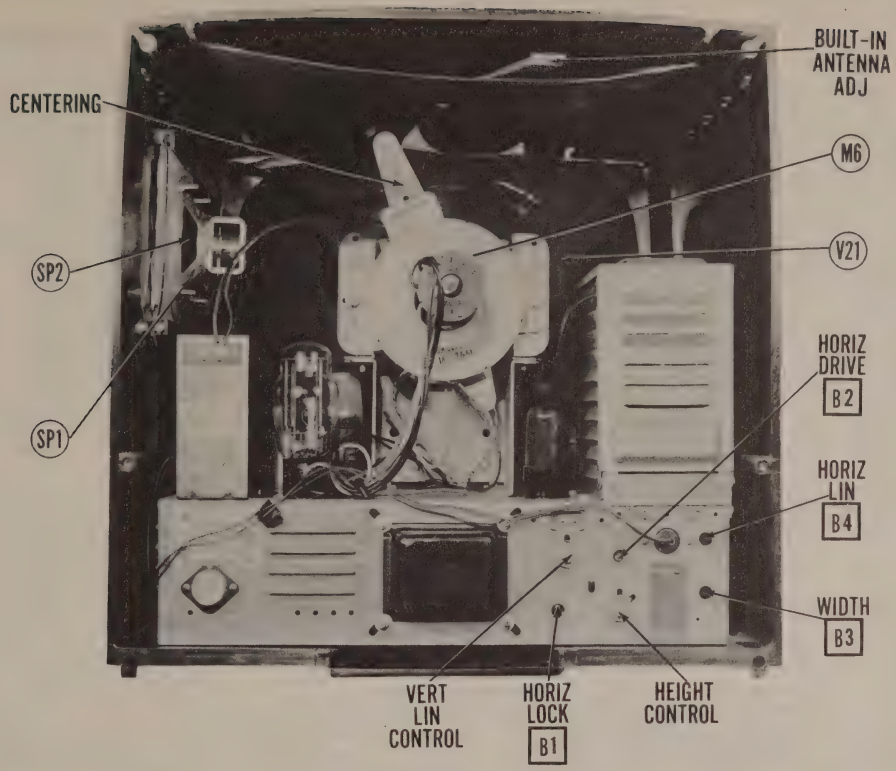
AND ALIGNMENT IDENTIFICATION



RF TUNER-RIGHT SIDE



RF TUNER-BOTTOM VIEW



CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably a test pattern.

Turn the hold control to fully counter-clockwise. If the picture falls out of sync, adjust the horizontal lock slug (B1) until the picture synchronizes.

Slowly turn B1 counter-clockwise until the picture just falls out of sync, and the clockwise to the point where the picture just falls into sync.

The picture should now fall into sync, after momentary interruption of the signal, over at least half of the hold control range.

Adjust the horizontal drive trimmer, (B2), counter-clockwise as far as possible without bright vertical lines appearing in the picture.

Adjust the width slug, (B3), until the picture fills the mask horizontally.

Adjust the horizontal linearity slug, (B4) until the picture is symmetrical from left to right. Slight readjustment of B2 may be required for optimum results.

DISASSEMBLY INSTRUCTIONS

1. Remove four push-on type control knobs.
2. Remove four wood screws and two hex head screws from rear cover. Remove rear cover.
3. Disconnect speaker.
4. Remove four hex nuts from speaker. Remove speaker.
5. Remove four hex head bolts from chassis. Remove chassis.

NOTE: FOR PICTURE TUBE REMOVAL IT IS NECESSARY TO REMOVE THE CHASSIS AS OUTLINED ABOVE.

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA ADMIRAL PART No.	REPLACEMENT DATA STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1A	RF Amplifier	6CB6	6CB6	6CB	
B	RF Amplifier	6BC5	6BC5	TBD	
C	RF Amplifier	6AG5	6AG5	TBD	
V2	Converter	6J6	6J6	TBF	
V3	1st Video IF Amp.	6AU6	6AU6	TBK	
V4A	2nd Video IF Amp	6AU5	6AU5	TBD	
B	2nd Video IF Amp	6AU6	6AU6	TBK	
C	2nd Video IF Amp	6CB6	6CB6	6CK	
D	2nd Video IF Amp	6BC5	6BC5	TBD	
V5A	3rd Video IF Amp.	6AG5	6AG5	TBD	
B	3rd Video IF Amp.	6AU6	6AU6	TBK	
C	3rd Video IF Amp.	6CB6	6CB6	6CK	
D	3rd Video IF Amp.	6BC5	6BC5	TBD	
V6	Video Detector, AGC Rectifier	6AL5	6AL5	6BT	
V7	Video Amplifier	6AC7	6AC7	5AK	
V8	Sound IF Amp.	6AU6	6AU6	5BK	
V9	Ratio Detector	6AL5	6AL5	6BT	
V10A	AF Amplifier	6AV6	6AV6	7B	
B	AF Amplifier	6BQ7	6BQ7	8Q	
V11	Audio Output	6V6GT	6V6GT	7AC	
V12A	Sync. Separator	6SN7GT	6SN7GT	8BD	
B	Sync. Separator - Sync. Clipper	12AU7	12AU7	9A	
V13	Sync. Phase Det. - Vertic. Oscillator	6SN7GT	6SN7GT	8BD	
V14	Vertl. Output	6S4	6S4	3AC	
V15A	Horiz. Phase Det.	6AL5	6AL5	6BT	
B	Horiz. Phase Det.	6N6	6N6	7Q	
C	Horiz. Phase Det.	2N6	2N6	7Q	
V16	Horiz. Mult.	6SN7GT	6SN7GT	8BD	
V17	Horiz. Output	6BQ6GT	6BQ6GT	6AM	
V18	Damper	6AU4GT	6AU4GT	6CG	
V19	H.V. Rectifier	1B3GT	1B3GT	3C	
V22	H.V. Rectifier	5U4G	5U4G	5T	
V23A	Picture Tube	17BP4A	17BP4A	12D	
B	Picture Tube	17BP4	17BP4	12D	
C	Picture Tube	17BP4	17BP4	12D	
D	Picture Tube	17CP4	17CP4	12D	
E	Picture Tube	20CP4	21CP4	12D	
F	Picture Tube	21BP4	21BP4	12D	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP	RATING VOLT	REPLACEMENT DATA ADMIRAL PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	450	67C-5107	AFH1144H		UPT6224S		TVL-3785	■ Filter
B	20	350						TVA-1608	■ Filter
C	20	350				UPT317		TVL-2730	▲ Decoupling
C2A	20	450	67C15-18	AFH4216B				TVA-1310	● Filter
B	80	350		20B					▲ Vert. Output Cathode
C	100	50							▲ Decoupling
C3A	40	450	67C15-19	AFH2214A		UP1045C		TVL-3737	▲ Decoupling
B	20	25				BR1G2A			▲ Output Cathode
C	40	50							Horiz. Output Cathode
C4	4	50	67A4-9	PRS150/4		BBR4-50T		TVA-1303	Stabilizing Cap
C5	3-9		98A45-98						Variable Trimmer
C6	5-3		98A45-23		829-3				Variable Trimmer
C7	120		98A49-25	SU20	D6-121		GP2K-120	19C29	RF Amp. Dec.
C8	1000		98A49-24	SU-008	DD-102		N750L-102	29C16	RF Coupling
C9	100		98A45-26	SU-N750	TCN-100		N750L-100	29C16	RF Coupling
C10	5-3		98A45-23		829-3				Variable Trimmer
C11	20		98A45-27	SU20NPO	TCZ-20		NPOK-20		Osc. Grid Cap
C12	10		98A45-79	SU-N750	TCN-10		N75K-10	19C4	Fixed Trimmer
C13	5-3		98A45-23		829-3				Variable Trimmer
C14A	1000		98A49-93	BPD-2X001	DD-2-102		812-2X001	29C7	RF Bypass
B	1000								Conv. Fil. Bypass
C15	10		98A45-84	SU20NPO	TCZ-10		NPOK-10	19C3	Fixed Trimmer
C16	120		98A45-78	SU20	D6-121		GP2K-120	19C29	IF Coupling
C17	4000		65B1-1		TCZ-420		NPOM-420		Fixed Trimmer
C18A	4000		98A17-4	BPD-2X004	DD-2-502	1D5D4	822-2X004	36C2	RF Bypass
B	4000					1D5D4			Filament Bypass
C19	1000		65B6-61	BPD-001	DD-102	1W5D1	801-001	19C1	AGC Filter
C20A	1500		65A27-2	BPD-2X015	DD-2-152	1W5D15	812-2X015	29C6	AGC Filter
B	1500					1W5D15			1st V. IF Dec.
C21A	1500		65A17-2	BPD-2X015	DD-2-152	1W5D15	812-2X015	29C6	AGC Filter
B	1500					1W5D15			2nd V. IF Dec.
C22	32	300	64B8-37		P488-23			27M-P22	AGC Filter
C23	1000		65A12-1	BPD-005	DD-502	1D5D5	811-005	29C1	3rd V. IF Dec.
C24	4000		65A7-1	BPD-2X004	DD-2-502	1D5D4	822-2X004	36C2	3rd V. IF Cathode
B	4000					1D5D4			3rd V. IF Fil.
C25	120		65B6-66	SU20	D6-121	5W5T15	GP2K-120	19C29	IF Coupling
C26	1	400	64B5-20	P488-1	DF-104	PTE4P1		47M-P1	Video Coupling
C27	047	600	64B8-28	P488-047	DF-503	PTE4S5		47M-S47	Pic. Tube Grid
C28	047	600	64B8-47	P488-047	DF-503	PTE4S5		47M-S47	Pic. Tube Accel. Anode
C29	6.8		65B6-71	SI6.8NPO	TCZ-6.8		NPOK-6.8		S. IF Coupling
C30	20		65B6-54	SU20NPO	TCZ-20	5R5Q2	NPOK-20	MS-42	Fixed Trimmer
C31	5000		65A10-1	BPD-005	DD-502	811-005	811-005	29C1	S. IF Dec.
C32	100			SD100NPO	TCZ-100		NPOM-100	36C10	Fixed Trimmer †
C33	80						M150L-80		Fixed Trimmer †
C34	500		65B6-6	SI500	D6-501	5W5T5	GP2K-500	19C32	Diode Load Cap
C35	1000		65B6-61	SU100	D6-102	1W5D1	GP2L-101	19C1	De-emphasis
C36	.47	400	64B5-21	P488-47	DF-503	PTE4S5		27M-S47	Audio Coupling
C37	5000		65A10-1	BPD-005	DD-502	1D5D5	811-005	29C1	Audio Coupling
C38	50		65B6-4	SI50	D6-500	5W5Q5	GP2K-50	19C28	AF Amp. Grid
C39	.47	600	64B8-72	484-5		GT4P5		47M-P5	AF Amp. Dec.
C40	.01	600	64B5-25	P488-01	DF-103	PTE4S1	821-01	47M-S1	Audio Coupling
C41	.0047	600	64B5-12	P488-0047	DF-472	PTE5D5	GP2M-0047	47M-D47	Output Plate
C42	150	500	65B21-151	1468-00015	D6-151	5W5T15	GP2K-150	19M-315	Sync. Coupling
C43	.047	400	64B8-28	P488-047	DF-503	PTE4S5		47M-S47	Sync. Coupling
C44	.047	400	64B5-24	P488-022	DF-203	PTE4S3		47M-S22	Sync. Coupling
C45	.01	400	64B5-25	P488-01	DF-103	PTE4S1	821-01	47M-S1	Sync. Coupling

CAPACITORS (CONT.)

ITEM No.	RATING CAP	RATING VOLT	REPLACEMENT DATA ADMIRAL PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C46A	2000		T63A3-1		P488-002	1	PTE5D2	GP2M-002	6TM-D2 Integrator Net
B	5000				P488-005	PC-100	PTE5D5	811-005	6TM-D5 Integrator Net
C	5000				P488-005		PTE6D5	811-005	6TM-D5 Integrator Net
C47	4700	500	65B21-472	1467-0005		D6-472	1D5D5	GP2M-0047	1FM-25 Vert. Osc. Grid
C48	.047	600	64B8-9	P488-047			PTE2S5		6TM-S47 Vert. Discharge
C49	470	600	64B5-5	P488-1		DF-104	PTE4S1		6TM-P1 Vert. Sweep Coupling
C50	.47	200	64B9-85	P288-47			GT2P5	2TM-P47	Decoupling
C51	1200	500	65B21-102	SI1200		D6-122		GP2L-0022	Horiz. Sync. Coupling
C52	1200	500	65B21-102	SI1200		D6-122		GP2L-0022	Horiz. Sync. Coupling
C53	.01	400	64B5-25	P488-01		D6-103	PTE4S1	821-01	4TM-S1 AFC Filter
C54	.0047	600	64B5-12	P488-0047		D6-472	PTE5D5	GP2M-0047	6TM-D47 AFC Filter
C55	.047	400	64B8-28	P488-047		DF-503	PTE4S5		4TM-S47 AFC Filter
C56	330	500	65B21-331	1468-00035		D6-331	5W5T3	GP2K 330	19C14 Horiz. MV Feedback
C57	3900	500	65B6-63	1464-004			1DR3D4		MS-24 Fixed Trimmer
C58	330	500	65B21-331	SI330		D6-331	5R5T3	GP2K-330	19C14 Horiz. Discharge
C59	470	500	65B21-471	1468-0005		D6-471	5W5T5	GP2K-470	19M-35 Horiz. Sweep Coupling
C60	.047	600	64B5-7	P688-047		DF-503	PTE6S5		6TM-S47 Horiz. Output Screen
C61	.0022	600	64B9-11	P688-0022		D6-222	PTE6D2	GP2M-0022	6TM-D22 Fixed Trimmer *
C62	.047	600	64B9-12	P488-047		DF-202	PTE4S2		4TM-S2 Damper Filter
C63	.05	500	64A3-8	P288-05		DF-503	PTE4S5		2TM-S5 Damper Filter
C64	.25	600	64B5-3	484-25			GT6P25		6TM-P25 Damper Filter
C65	.1	400	64A3-10	P488-1		DF-104	PTE4P1		4TM-P1 Horiz. Sweep Coupling
C66	500	20000	65B18-5			HV20C	TV3-502		H.V. Filter

* Some models use .0047MFD in this application.
† Items C46A, C46B, C46C, R65A, R65B and R65C are combined into one unit.
‡ Some models use 180MMF capacitor in place of C52 and C53.

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA ADMIRAL PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	1500Ω	1	75B11-16		RTV-214	5BB-580-S	Contrast Control – Front
B	250kΩ	1					Volume Control And SW - Rear
R2A	100kΩ	1	73B13-12	Q11-128	AG-49-S	AN-40	Brightness Control
B	Shaft		Not req.	Not req.	RS-2	AK-4	Attach to R2A Per Instructions
R3A	1Meg	½	73B13-44	Q11-137	AG-81-S	AN-09	Vertical Hold Control
B	Shaft		Not req.	Not req.	RS-2	AK-4	Attach to R3A Per Instructions
R4A	25kΩ	½	73B13-13	Q11-120	AG-40-S	AN-26	Horizontal Hold Control
B	Shaft		Not req.	Not req.	RS-2	AK-4	Attach to R4A Per Instructions
R5	750Ω	2	75B13-16				Focus Control - Wire Wound
R6A	3000Ω	1	75B13-7	Q11-112	AG-15-S	B-8	Vertical Linearity Control
B	Shaft		Not req.	Not req.	FKS-1/4	Not req.	Attach to R6A Per Instructions
R7A	2.5Meg	½	73B13-3	Q11-230	AG-84-S	AN-03	Height Control
B	Shaft		Not req.	Not req.	FKS-1/4	AK-1	Attach to R7A Per Instructions

RESISTORS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA ADMIRAL PART No.	IRC PART No.	IDENTIFICATION CODES ALL RESISTORS ± 10% UNLESS OTHERWISE SPECIFIED
R8	3900Ω	1	98A45-16	BTS-3900	Antenna Coil Shunt
R9	47kΩ 20%	2	98A45-17	BTS-47K	AGC Network
R10	10kΩ 20%	2	98A45-18	BTS-10K	RF Coil Shunt
R11	2200Ω 10%	1	98A45-19	BTS-2200	RF Amp. Decoupling
R12	4700Ω	2	98A45-20	BTS-4700	Mixer Grid
R13	220kΩ 20%	2	98A45-21	BTS-220K	Mixer Grid
R14	15kΩ 20%	2	98A45-67	BTS-15K	Mixer Plate
R15	10kΩ	2	98A45-18	BTS-10K	Osc. Grid
R16	4700Ω	2	98A45-20	BTS-4700	Osc. Plate
R17	1000Ω	2	60B8-102	BTS-1000	AGC Network
R18	1000Ω	1	60B8-102	BTS-1000	AGC Network
R19	1000Ω	1	60B8-102	BTS-1000	Decoupling
R20	10kΩ 5%		60B7-103		1st Video IF Amp. Grid
R21	470	2	60B28-45		1st Video IF Amp. Cathode
R22	1000Ω		60B8-102	BTS-1000	1st Video IF Amp. Decoupling
R23	18kΩ		60B8-183	BTS-18K	2nd Video IF Transformer Shunt
R24	68Ω 20%		60B28-44		2nd Video IF Amp. Cathode
R25	1000Ω		60B8-102	BTS-1000	2nd Video IF Amp. Decoupling
R26	10kΩ 5%		60B7-103		3rd Video IF Transformer Primary Shunt
R27	15kΩ		60B8-153		3rd Video IF Transformer Secondary Shunt - See Note 1
R28	150Ω		60B8-151	BTS-150	3rd Video IF Amp. Cathode
R29	1000Ω		60B8-102	BTS-1000	3rd Video IF Amp. Decoupling
R30	4700Ω 5%		60B7-472	BTS-4700-5%	Video Det. Diode Load
R31	560kΩ 10%		60B8-564	BTS-560K	AGC Network
R32	680kΩ		60B8-684	BTS-680K	AGC Network
R33	47kΩ	2	60B20-473	BTS-47K	Video Amp. Screen
R34	10kΩ	2	60B20-583	BTS-58K	Video Amp. Screen
R35	4700Ω	2	60B20-472	BTS-4700	Video Amp. Plate
R36	100kΩ		60B8-104	BTS-100K	Voltage Divider
R37	680kΩ		60B8-684	BTS-680K	Isolation
R38	560kΩ		60B8-564	BTS-560K	Picture Tube Cathod
R39	22kΩ		60B8-223	BTS-22K	Acc. Anode Load
R40	470kΩ		60B8-474	BTS-470K	Sound IF Amp. Grid
R41	220		60B28-21		Sound IF Amp. Cathode
R42	1000Ω		60B8-102	BTS-1000	Decoupling
R43	10kΩ 5%		60B7-103	BTS-10K-5%	Ratio Det. Diode Load
R44	10kΩ 5%		60B7-103	BTS-10K-5%	Ratio Det. Diode Load
R45	390Ω		60B8-391	BTS-390	Balancing
R46	47kΩ		60B8-473	BTS-47K	De-emphasis
R47	4.7Meg		60B8-475	BTS-4.7Meg	AF Amp. Grid
R48	150kΩ		60B8-154	BTS-150K	AF Amp. Plate
R49	47kΩ		60B8-473	BTS-47K	AF Amp. Plate Decoupling
R50	1Meg		60B8-105	BTS-1Meg	Output Grid
R51	330Ω		60B14-331	BTA-330	Output Cathode
R52	18kΩ		60B8-183	BTS-18K	Isolation
R53	270kΩ		60B8-274	BTS-270K	Isolation
R54	2.2Meg		60B8-225	BTS-2.2Meg	Sync. Sep. Grid
R55	47kΩ		60B14-473	BTA-47K	Sync. Sep. Plate
R56	18kΩ		60B8-183	BTS-18K	Voltage Divider
R57	2.2Meg		60B8-225	BTS-2.2Meg	Sync. Clipper Grid
R58	27kΩ	2	60B20-273	BTB-27K	Sync. Clipper Plate
R59	8.2Meg		60B8-825	BTS-8.2Meg	Sync. Phase Inv. Grid
R60	1000Ω		60B8-102	BTS-1000	Sync. Phase Inv. Cathode
R61	2200Ω 5%	1	60B8-222	BTS-2200-5%	Sync. Phase Inv. Plate
R62	2200Ω 5%	1	60B8-222	BTS-2200-5%	Sync. Phase Inv. Plate
R63	12kΩ 20%	2	60B20-123	BTB-12K	Voltage Divider
R64	15kΩ	1	60B14-153	BTA-15K	Voltage Divider

RESISTORS (CONT.)

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA ADMIRAL PART No.	IRC PART No.	IDENTIFICATION CODES
R65A	22kΩ	1		1G3A3-1	BTS-22K Integrator
B	82000Ω	1			BTS-8200 Integrator
C	82000Ω	1			BTS-8200 Integrator
R66	150kΩ 20%	1	60B8-154		BTS-150K Vert. Osc. Grid - See Note 1
R67	1.2Meg 20%	1	60B8-125		BTS-1.2Meg Vertical Osc. Grid - See Note 2
R68	1Meg	1	60B8-105		BTS-1Meg Vertical Osc. Plate - See Note 3
R69	8200Ω	1	60B8-822		BTS-8200 Vertical Peaking
R70	1Meg	1	60B8-105		BTS-1Meg Vertical Output Grid
R71	820Ω	1	60B8-821		BTS-820 Vertical Output Cathode - See Note 4
R72	8200Ω	2	60B20-821		BTB-820 Decoupling
R73	100kΩ 5%	1	60B7-104		BTS-100K-5% Horizontal Phase Det. Diode Load
R74	100kΩ 5%	1	60B7-104		BTS-100K-5% Horizontal Phase Det. Diode Load
R75	4.7Meg 20%	1	60B8-475		BTS-4.7Meg Horizontal Phase Det. Diode Load
R76	470kΩ 20%	1	60B8-474		BTS 470K Horizontal AFC Filter
R77	1500Ω	1	60B8-152		BTS-1500 Horizontal MV Cathode
R78	5600Ω	1	60B8-562		BTS-5600 Horizontal MV Grid
R79	120kΩ	1	60B8-124		BTS-120K Horizontal MV Grid
R80	150kΩ 20%	1	60B8-154		BTS-150K Horizontal MV Plate
R81	820Ω	1	60B14-822		BTA-8200 Horizontal MV Decoupling
R82	8200Ω	1	60B8-822		BTS-8200 Horizontal Peaking
R83	39Ω				Parasitic Suppressor - See Note 5
R84	82Ω		60B28-31		BTS-82 Parasitic Suppressor
R85	1Meg	1	60B8-105		BTS-1Meg Horizontal Output Grid
R86	470	1	60B28-45		BW-1-47 Horizontal Output Cathode
R87	6800Ω	2	60B20-682		BTB-6800 Horizontal Output Screen
R88	12kΩ 20%	2	60B20-123		BTB-12K Horizontal Feedback
R89	2.7Ω	1	60B28-47		BW-1-2.7 HV Rectifier Filament - Wire Wound
R90	470kΩ	1	60B28-43		BTA-470K HV Filter
R91	3000Ω	15	63A3-14		SD-3000 Voltage Divider
R92A	2725Ω	2½	61A5-8		Voltage Divider - Wire Wound - See Note 7
B	2650Ω	10			Voltage Divider - Wire Wound - See Note 7
R93	4.7Ω	½	60B28-11		BW-½-4.7 Series Pilot Light - Wire Wound - See Note 1
R94	350kΩ	1			BTA-330K Isolation - See Note 6

† Items R65A, R65B, R65C, C48A, C48B and C48C are combined into one unit.
Note 1. Not used in all models.
Note 2. Some models use 1.5 meg resistor in this application.
Note 3. Some models use 2.4 meg resistor in this application.
Note 4. Some models use 680Ω resistor in this application.
Note 5. Some models use 68Ω resistor in this application.
Note 6. Some models use 270kΩ resistor in this application.
Note 7. Used only in chassis 21G1, 21L1, and 21Q1.

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	RATING SEC. 3	REPLACEMENT DATA ADMIRAL PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	117VAC	580VCT	5VAC	6.3VAC	80C26-1			
	1.65A	225ADC	3A	9A				

TRANSFORMER (FILAMENT)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	RATING SEC. 3	REPLACEMENT DATA ADMIRAL PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T2	6.3VAC	12.6VAC			80B-32 ⑤			

⑤ Used only in when tube V15 is 12H8.

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING DC RESISTANCE PRI.	RATING SEC.	ADMIRAL PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	NOTES
T3	200Ω	1100Ω	79A18-2	A-8111 ⑥	A-3000 ⑥	TB0-1	Vertical Block Osc. Trans
T4	350Ω	2Ω	79C30-2		HV0-6 ⑥		Horizontal Output Trans.
	Tap 35Ω	SEC. 2					
		3.6Ω					
		SEC. 3					
		0Ω					
T5	1.3KΩ		79B29-1	A-8123	A-3037	TS0-1 ⑥	Vertical Output Trans.
	Tap 13Ω						
T6A	10Ω		A-3222	DY-7	MDF-70		Horizontal Deflection Coil
B	46.5Ω		A-3402 ⑦				Vertical Deflection Coil
T7	270Ω		69C117-3				Focus Coil
	Tap 173Ω						

⑥ Drill one new mounting hole.
⑦ Used with 20" picture tubes.
Δ Use MWC-1 for acc winding.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	RATING IMPEDANCE SEC.	RATING DC RES. PRI.	RATING DC RES. SEC.	ADMIRAL PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
T8	4.2kΩ	3Ω	260Ω	2.8Ω	79C33-1 ⑤	A-3877 ⑥	A-2930	R0-9 ⑥	⑤ Used on chassis 21F1, 21Q1, 21L1 ⑥ Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA ADMIRAL PART No.	VIKING PART No.	QUAM PART No.	NOTES
	FIELD RES.	V. C. IMP.				
SP1A	PM	3Ω	78B59-1 ①	5J4	5A1	① Used with chassis 21F1
B	PM	3Ω	78B49-1 ①	8J9	8A2E	② Used with chassis 21F1, 21G1, 21P1, 21Q1
C	PM	3Ω	78B47-2-5 ②	10J12	10A4A	③ Used with chassis 21L1, 21K1
D	PM	3Ω	78B56-3-4 ③	12J12	12A4A	
	CONE DIA.	V. C. DIA				
SP2A	5"	9/16"				
B	8"	1"				
C	10"	1"				
D	12"	1"				

PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	ADMIRAL PART No.	MEISSNER PART No.	
L1	Ant. Coil	0Ω	0Ω			Refer to Misc. Section for Part Number
L2	Fil. Choke	0Ω		98A45-13		
L3	RF, Mixer Grid and Osc. Coils	0Ω				Refer to Misc. Section For Part Number
L4	Fil. Choke	0Ω		98A45-14		
L5	1st Video IF	1Ω		98A45-77		
L6	Fil. Choke	0Ω		73A2-5		
L7	Adj. Channel Sound Trap	0Ω		72A102		Includes C17
L8	Fil. Choke	0Ω		73A2-5		
L9	2nd Video IF	.5Ω	.5Ω	72C96-6		Includes R22, R23 and C21
L10	3rd Video IF	.5Ω	.5Ω	72C96-7		Includes R26
L11	4th Video IF	.5Ω	.5Ω	72C96-8		Includes C25
L12	Peaking	7.5Ω		73A5-12		Red Dot
L13	Peaking	17Ω		73A5-7		Yellow Dot
L14	Peaking	8Ω		73A5-13		Wound on 33KΩ Resistor
L15	Peaking	8.5Ω		73A5-9		Wound on 10KΩ Resistor
L16	Sound IF	5Ω		72B99-1		Includes R40, C29 and C30
L17	Ratio Det. Trans.	3.7Ω	.3Ω	72B68		
L18	Horiz. Lock Coil	55Ω		94A17		Includes R78 and C57
L19	Horiz. Lin.	19Ω		94A28		Tap at 7Ω
L20	Width Coil	8.5Ω		94A29-1		

FUSES

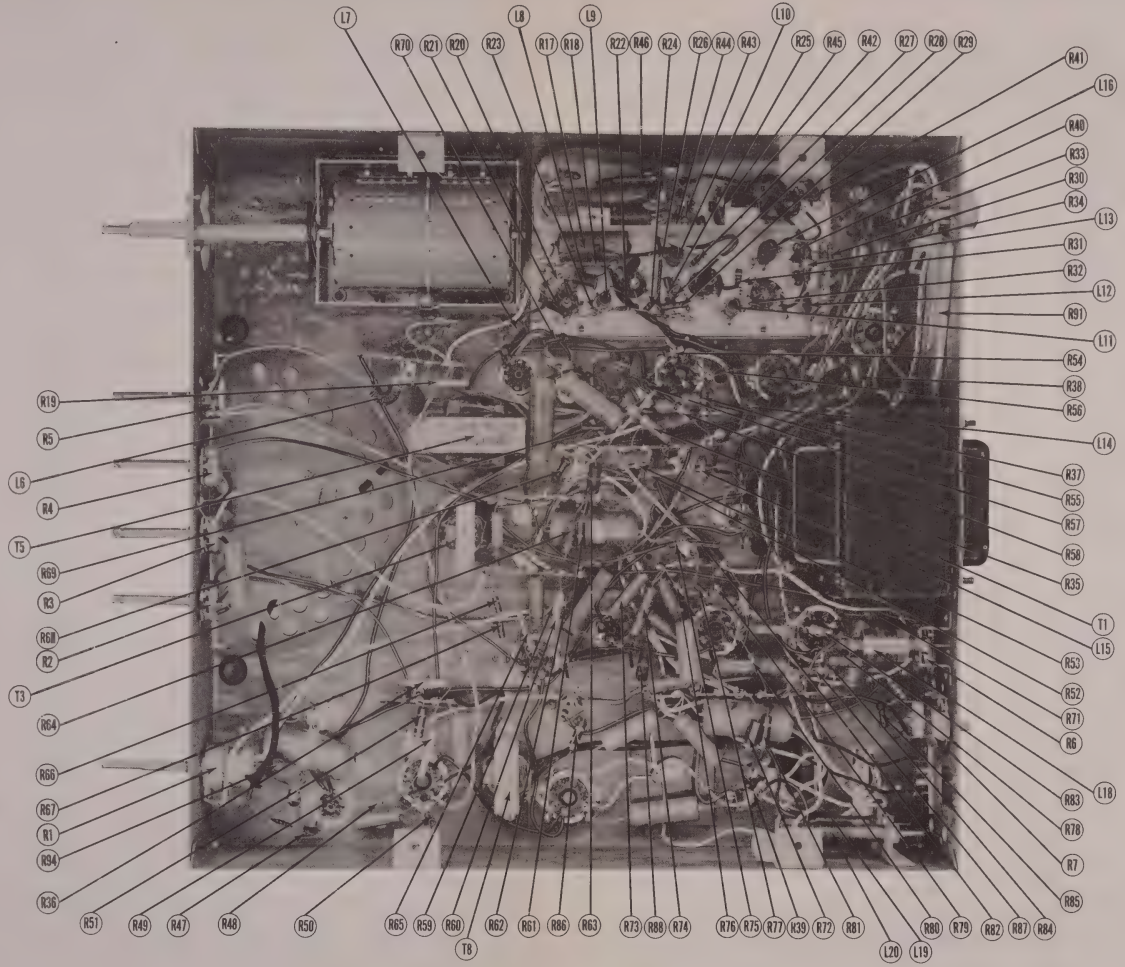
ITEM No.	TYPE	RATING	REPLACEMENT DATA				REMARKS
			ADMIRAL PART No.		LITTELFUSE PART No.		
			FUSE	HOLDER	FUSE	HOLDER	
M1	8AG	.250	84A4-2	84A5-1	362.250	387001	

DIAL LIGHTS

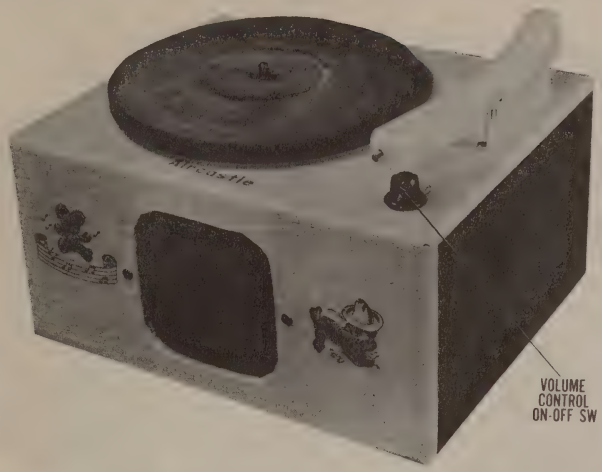
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					ADMIRAL PART No.		
M2	Bayonet	6-8	.15	Brown	81A1-8		Type #47 (Not used in all models)
M3	Bayonet	117VAC			81A2-4		Phono Compartment Light (Not used in all models)

MISCELLANEOUS

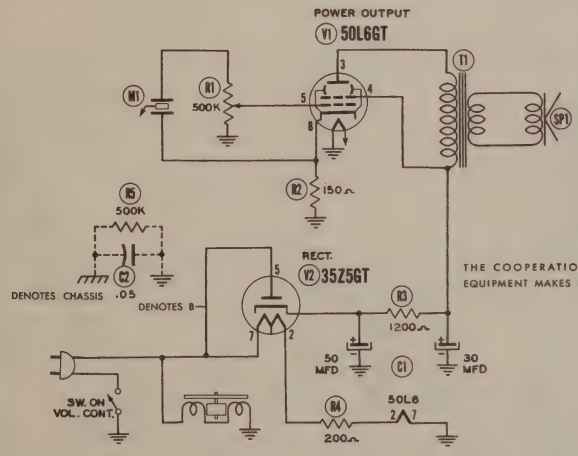
ITEM No.	PART NAME	ADMIRAL PART No.	NOTES
M4	Switch	77A29	Dial Light (Not used in all models)
M5	RF Tuner	94C18-4	Complete
M6	Ion Trap	94A15-2	
B2	Trimmer	66A30-1	Horizontal Drive (20-280MMF)
	Antenna Coil	98A62-2	Channel 2
		98A62-3	Channel 3
		98A62-4	Channel 4
		98A62-5	Channel 5
		98A62-6	Channel 6
		98A62-7	Channel 7
		98A62-8	Channel 8
		98A62-9	Channel 9
		98A62-10	Channel 10
		98A62-11	Channel 11
		98A62-12	Channel 12
		98A62-13	Channel 13
	RF, Mixer Grid and Osc. Coils	98A63-2	Channel 2
		98A63-3	Channel 3
		98A63-4	Channel 4
		98A63-5	Channel 5
		98A63-6	Channel 6
		98A63-7	Channel 7
		98A63-8	Channel 8
		98A63-9	Channel 9
		98A63-10	Channel 10
		98A63-11	Channel 11
		98A63-12	Channel 12
		98A63-13	Channel 13
	Safety Glass	23D83	Plastic (Models 17K11, 17K12)
	Safety Glass	23D73	Plastic (Model 27K12)
	Safety Glass	23E76	Plastic (Model 221K16A)
	Safety Glass	21B49-1	Glass (Models 221K16, 221K26, 221K28, 221K35, 221K36, 321K15, 321K16, 321K18, 321K27, 321K35, 321K36, 321K46, 321K47, 321K49)
	Safety Glass	23D84-2	Plastic (Use with 21P1, 21Q1 Chassis)(17CP4 Metal Tube) Where Model Numbers Do Not Use Suffix "A" Or "B"
	Safety Glass	23D84-1	Plastic (Use with 21F1, 21G1 Chassis) Where Model Numbers Do Not Use Suffix "A" Or "B")
	Safety Glass	23E72-1	Plastic (Use with 17 Inch Sets With Model Numbers Having Suffix "A")
	Safety Glass	21B49-3	Plastic (Use with 17 Inch Sets With Model Numbers Having Suffix "B")
	Knob	33C53-9	Channel Selector (Maroon)
	Knob	33C53-13	Channel Selector (Ebony)
	Knob	33C53-10	Fine Tuning (Maroon)
	Knob	33C53-14	Fine Tuning (Ebony)
	Knob	33C53-12	Contrast (Maroon)
	Knob	33C53-16	Contrast (Ebony)
	Knob	33C53-11	Volume (Maroon)
	Knob	33C53-15	Volume (Ebony)



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION



TRADE NAME	Aircastle, Models 06-F, 06-L
SUPPLIER	Spiegel, Inc., 1061 W. 35th. St., Chicago, Illinois
TYPE SET	AC Operated Phono Player with 2 Tube Amplifier
TUBES (TWO)	Types 50L6GT or 50A5 Power Output, 35Z5GT or 35Y4 Rectifier
POWER SUPPLY	110-120 Volts AC — RATING .45 Amp. @ 117 Volts AC



Pin No.	50L6GT Volt.	50L6GT Res.	35Z5GT Volt.	35Z5GT Res.
1	0V	Inf.	0V	Inf.
2	50VAC	50Ω	80VAC	250Ω
3	85VDC	±1.4KΩ	85VAC	275Ω
4	90VDC	±1.2KΩ	0V	Inf.
5	0V	0Ω	117VAC	285Ω
6	0V	Inf.	0V	Inf.
7	0V	0Ω	117VAC	285Ω
8	6.7VAC	150Ω	130VDC	40KΩ

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A PHOTOFACT STANDARD NOTATION SCHEMATIC

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135-3

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		AIRCASTLE PART No.	STANDARD REPLACEMENT		
V1A	Power Output	50L6	50L6	7AC	
B	Power Output	50A5	50A5	6AA	
V2A	Rectifier	35Z5	35Z5	6AD	
B	Rectifier	35Y4	35Y4	5AL	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	AIRCASTLE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	
C1A	50	150	M5	PRS150/50-		EDL5315		TVA-2450	Filter Green
B	30	150		30					Filter Red *
C2	.05	400		P488-05	DF-503	PTE4S5		4TM-S5	Line Isolation †

* Some models use 50-50 MFD 150 Volts in this application

† Not used in all models

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	AIRCASTLE PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	
R1A	500KΩ	½	M4	Q11-137	AM-58-S	B-59-S	Volume Control
B	Shaft		Not req.	Not req.	RS-2	Not req.	Attach to R1A per instructions
C	Switch		Not req.	76-1	SW-A	Not req.	Attach to R1A per instructions

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	AIRCASTLE PART No.	IRC PART No.	
R2	150Ω	½	M1	BW-½-150	Output Cathode - Wire Wound
R3	1200Ω	1	M2	BTA-1200	Filter
R4	200Ω	10	M3	1 3/4A-200	Filament Dropping - Wire Wound
R5	500KΩ	½		BTS-500K	Isolation - See Note

Note Not used in all models.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		AIRCASTLE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T1	2.3KΩ	3.4Ω	200Ω	.6Ω	M6	A-3376	A-3025 ①	R0-2 ①	① Drill one new mounting hole.

SPEAKER

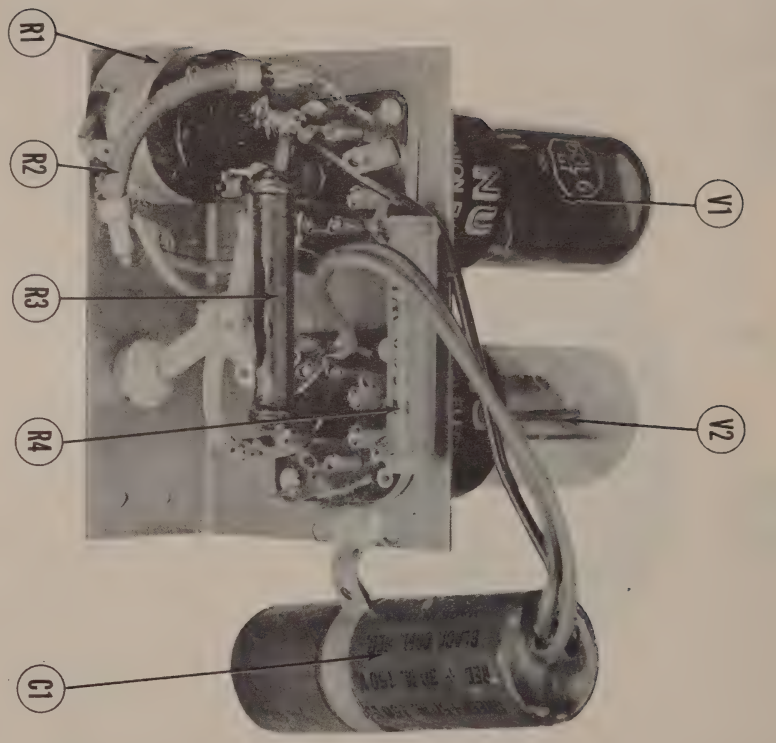
ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			AIRCASTLE PART No.	JENSEN PART No.	QUAM PART No.	
	FIELD	V. C. IMP.				
SP1	PM	3.4Ω	M7	ST105 Model P5-X	5A07	
	CONE DIA.	V. C. DIA.				
SP2	4 11/16"	9/16"				

PHONO CARTRIDGE and NEEDLE

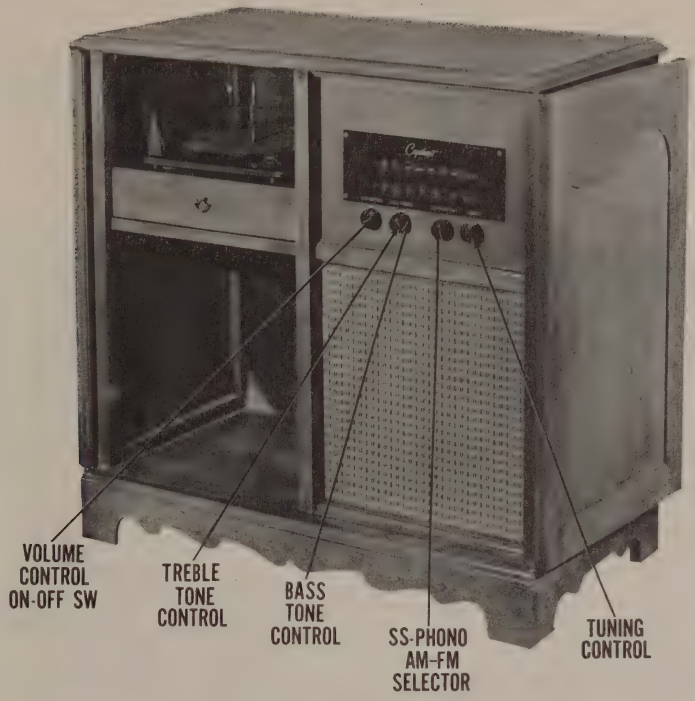
ITEM No.	REPLACEMENT DATA							REMARKS
	AIRCASTLE PART No.	ASTATIC PART No.		SHURE PART No.		ELECTRO-VOICE PART No.		
		CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	
M1A	M8	L-82-A		W-56A		32	0-3 or	
		507-L-82†		96 A†		24H60†	S-3	Model 06-F
M1B		L-29		W53MG	A64MG	H-60		Model 06-L
		507-L-29†		902MG†		24H60†		† Complete Arm Assembly

SHURE AND ELECTRO- VOICE NEEDLE LISTINGS SHOWN ABOVE ARE SPECIFIED FOR THE RESPECTIVE REPLACE MENT CARTRIDGES LISTED.

CHASSIS VIEW



CAPEHART MODELS 35P7, 1002F, 1003M, 1004B

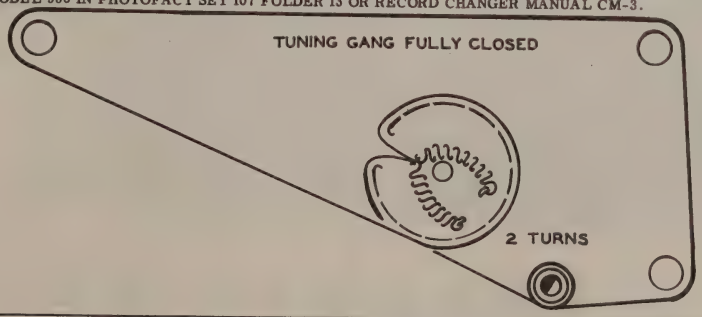


CAPEHART MODELS 35P7, 1002F, 1003M, 1004B

CAPEHART MODEL 1002F

TRADE NAME	Capehart, Models 35P7 (Ch. P-7), 1002F, 1003M, 1004B (Ch. P-8)
MANUFACTURER	Capehart - Farnsworth Corp., Fort Wayne, Indiana
TYPE SET	AC Operated Combination Phono-Radio, AM-FM Superheterodyne Receiver With Loop Antenna
TUBES (ELEVEN)	Types 6AG5 RF Amp., 12AT7 FM Converter, 6BE6 AM Converter, 6SK7 1st IF Amp., 6SK7 2nd IF Amp., 6SK7 3rd IF Amp., 6T8 Det.-AF-Amp., 6SQ7 Phase Inv.-AVC, (2) 6V6GT Power Output, 5Y3GT Rectifier
POWER SUPPLY	105-125 Volts AC — RATING .77 Amp. @ 117 Volts AC
TUNING RANGE-BROADCAST	540-1620KC — FREQ. MOD. 88-108MC

FOR SERVICE INFORMATION ON RECORD CHANGER SEE CAPEHART MODEL P-71 SIMILAR TO V-M MODEL 950 IN PHOTOFACT SET 107 FOLDER 13 OR RECORD CHANGER MANUAL CM-3.



DIAL CORD DRIVE

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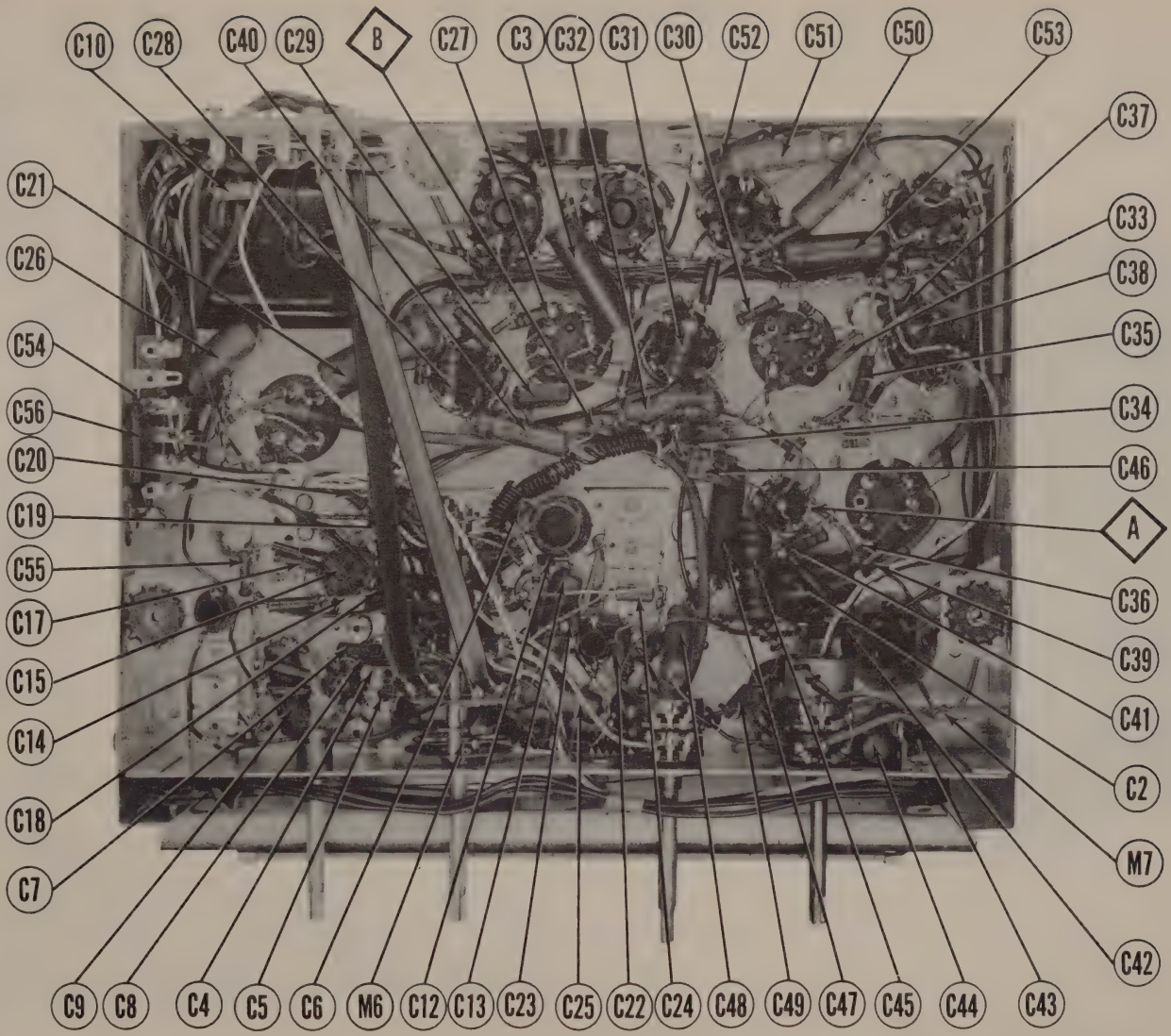
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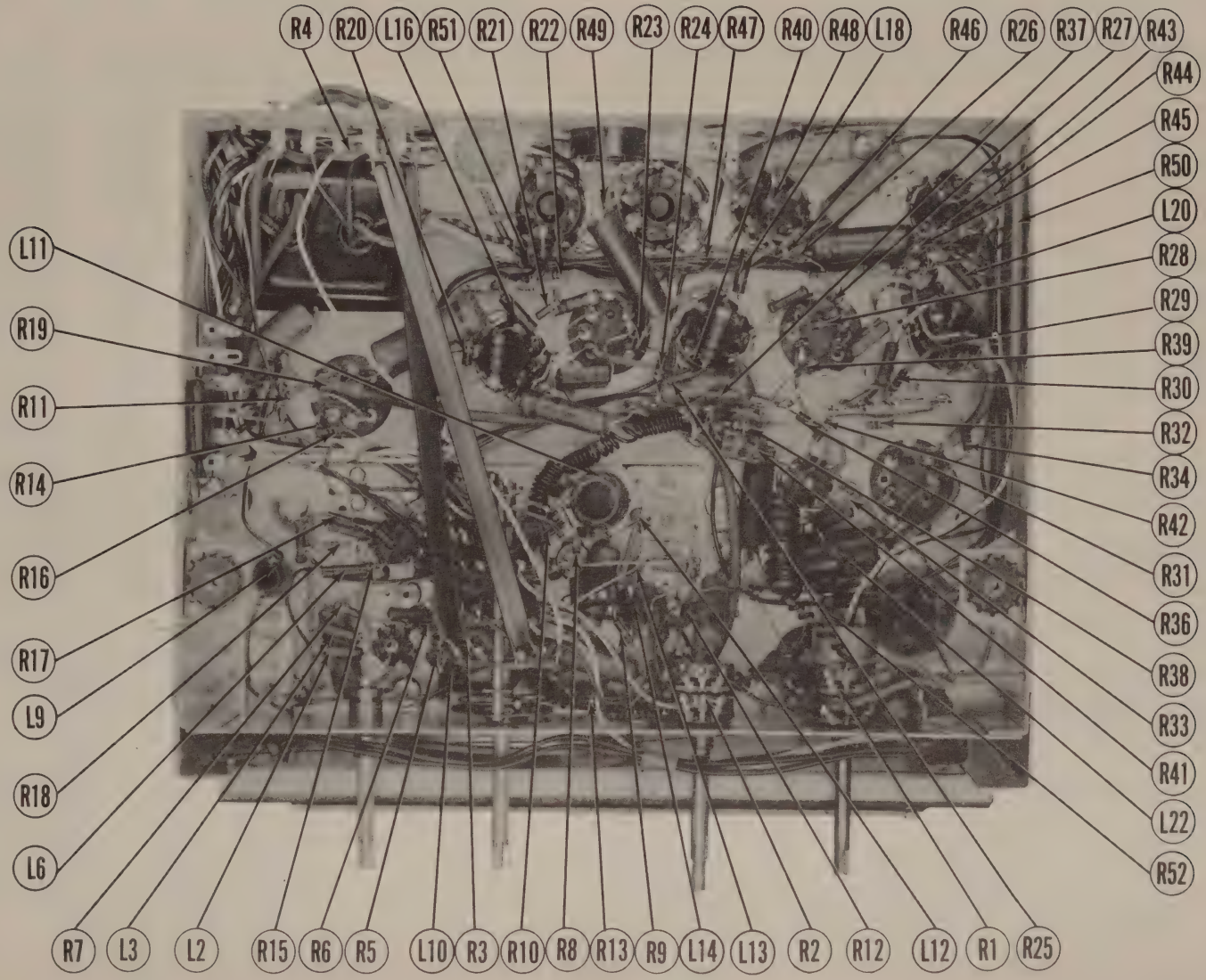
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R25

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: CAPEHART PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
V1	RF Amplifier	6AG5	6AG5	7BD	
V2	FM Converter	12AT7	12AT7	9A	
V3	AM Converter	6BE6	6BE6	7CH	
V4	1st IF Amp.	6SK7	6SK7	8N	
V5	2nd IF Amp.	6SK7	6SK7	8N	
V6	3rd IF Amp.	6SK7	6SK7	8N	
V7	Det.-AF Amp.-	6T8	6T8	9E	
V8	Phase Inverter-AVC	6SQ7	6SQ7	8Q	
V9	Power Output	6V6GT	6V6GT	7AC	
V10	Power Output	6V6GT	6V6GT	7AC	
V11	Rectifier	5Y3GT	5Y3GT	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: CAPEHART PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	30	450	25424	AF663J6B		UP32245C		TVL-4742	▲ Filter
B	20	450							■ Filter
C	20	450							▲ Filter
C2	4	100	25270	PRS150/4		BR415		TVA-1402	Stabilizing Cap
C3	25	25	25158	PRS25/25		BR252A		TVA-1205	Output Cathode
C4	240		25427	SI240	D6-251	5W5T25	GP2K-241	19C13	RF Coupling
C5	1500		25273	SI1500	D6-152	1W5D15	GP2L-152	29C8	AVC Filter
C6	1500		25273	SI1500	D6-152	1W5D15	GP2L-152	29C8	RF Amp. Plate Dec.
C7	1500		25273	SI1500	D6-152	1W5D15	GP2L-152	29C8	RF Amp. Screen
C8	1500		25273	SI1500	D6-152	1W5D15	GP2L-152	29C8	RF Amp. Cathode
C9	.05	200	25196	P288-05	DF-503	PTE4S5		2TM-S5	RF Amp. Cathode
C10	20		25492	SI20	TCZ-20	5W5Q2	GP1K-200	MS-42	Fixed Trimmer
C11	47	500	25193	1469-00005	TCZ-47	5R5Q5	GP1K-470	MS-45	Fixed Trimmer
C12	1		25497		TCZ-1				RF Coupling
C13	.05	200	25196	P288-05	DF-503	PTE4S5		2TM-S5	AVC Filter
C14	50		25493	SI50	D6-500	5W5Q5	GP1K-500	19C28	RF Coupling
C15	1		25497		TCZ-1				Osc. Coupling
C16	30		25329	SI30	D6-300	5W5Q3	GP1K-300	19C24	Osc. Grid Cap
C17	1500		25273	SI1500	D6-152	1W5D15	GP2L-152	29C8	Osc. Plate Bypass
C18	1500		25273	SI1500	D6-152	1W5D15	GP2L-152	29C8	Conv. Cath. Bypass
C19	40		25507	SI39	D6-390	5W5Q4	GP1K-390	1FM-44	Fixed Trimmer
C20	1500		25273	SI1500	D6-152	1W5D15	GP2L-152	29C8	Conv. Plate Dec.
C21	.05	600	25196	P688-05	DF-503	PTE6S5		6TM-S5	Conv. Plate Dec.
C22	47	500	25193	1468-00005	D6-470	5W5Q5	GP1K-470	1FM-45	Osc. Grid Cap
C23	480	500	25504						Fixed Padder
C24	20		25492	SI20	TCZ-20	5W5Q2	GP1K-200	MS-42	Fixed Trimmer
C25	.01	600	25186	P688-01	D6-103	PTE6S1	821-01	6TM-S1	Osc. Anode Bypass
C26	.1	200	25182	P288-1	DF-104	PTE4P1		2TM-P1	AVC Filter
C27	1500		25273	SI1500	D6-152	1W5D15	GP2L-152	29C8	1st IF Plate Dec.
C28	1500		25273	SI1500	D6-152	1W5D15	GP2L-152	29C8	1st IF Screen
C29	1500	500	25299	1467-0015	D6-152	1W5D15	GP2L-152	29C8	AVC Filter
C30	1500		25273	SI1500	D6-152	1W5D15	GP2L-152	29C8	2nd IF Plate Dec.
C31	1500		25273	SI1500	D6-152	1W5D15	GP2L-152	29C8	2nd IF Screen
C32	.05	200	25196	P288-05	DF-503	PTE4S5		2TM-S5	2nd IF Cathode
C33	100	500	25188	1468-0001	D6-101	5W5T1	GP1K-101	1FM-31	Diode RF Filter
C34	100	500	25188	1468-0001	D6-101	5W5T1	GP1K-101	1FM-31	Diode RF Filter
C35	1500		25273	SI1500	D6-152	1W5D15	GP2L-152	29C8	3rd IF Dec.
C36	1500		25273	SI1500	D6-152	1W5D15	GP2L-152	29C8	3rd IF Plate Dec.
C37	1500		25273	SI1500	D6-152	1W5D15	GP2L-152	29C8	3rd IF Screen
C38	1500		25273	SI1500	D6-152	1W5D15	GP2L-152	29C8	3rd IF Cathode
C39	100	500	25188	1468-0001	D6-101	5W5T1	GP1K-101	1FM-31	Diode Load Cap
C40	.003	600	25184	P688-003	D6-302	PTE6D3	GP2-333-302	6TM-D3	De-emphasis
C41	1500		25273	SI1500	D6-152	1W5D15	GP2L-152	29C8	RF Bypass
C42	1500		25273	SI1500	D6-152	1W5D15	GP2L-152	29C8	Filament Bypass
C43	47	500	25193	1468-00005	D6-470	5W5Q5	GP1K-470	1FM-45	RF Bypass
C44	.01	600	25186	P688-01	D6-103	PTE6S1	821-01	6TM-S1	Audio Coupling
C45	.01	600	25186	P688-01	D6-103	PTE6S1	821-01	6TM-S1	Audio Coupling
C46	100	500	25188	1468-0001	D6-101	5W5T1	GP1K-101	1FM-31	AF Amp. Plate
C47	.02	600	25195	P688-02	DF-203	PTE6S2		6TM-S2	Audio Coupling
C48	.01	600	25186	P688-01	D6-103	PTE6S1	821-01	6TM-S1	Tone Comp.

PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: CAPEHART PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES
R45	220KΩ	½	77178	BTS-220K	Phase Inv. Plate
R46	220KΩ	½	77178	BTS-220K	Output Grid
R47	220KΩ	½	77178	BTS-220K	Output Grid
R48	220KΩ	½	77178	BTS-220K	Output Grid
R49	270Ω	1	77174	BTA-270	Output Cathode
R50A	400Ω	10	77463		Filter - Wire Wound
B	1000Ω	10			Filter - Wire Wound
R51	15Ω	½	77491	BW-½-15	Bias Network
R52	680KΩ	½		BTS-680K	Series Phono - See Note 1
R53	3.3Ω	1	77492	BW-1-3.3	Filament Dropping - See Note 2

Note 1. Not used in all models.
Note 2. Not used in P-8 chassis.

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: CAPEHART PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.
T1	117VAC	600VCT	5VAC	6.3VAC	94262			
	ⓐ .77A	.108ADC	ⓐ 2A	ⓐ 4A				

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: CAPEHART PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.	INSTALLATION NOTES
T2	7.7KΩ CT	3.5Ω	360Ω CT	.3Ω	94235	A-3870	A-3027 ①	R0110 ①	① Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA: CAPEHART PART No.	REPLACEMENT DATA: VIKING PART No.	REPLACEMENT DATA: QUAM PART No.	INSTALLATION NOTES
	FIELD	V. C. IMP.				
SP1	PM	3.5Ω	13892	12J12	12A4A	
	CONE DIA.	V. C. DIA.				
SP2	11 3/8"	1"				

COILS (RF-IF)

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: CAPEHART PART No.	REPLACEMENT DATA: MEISSNER PART No.	NOTES
L1	FM Ant. Coil	0Ω		38958		
L2	Fil. Choke	.4Ω		38884		
L3	RF Choke	.4Ω		38884		
L4	FM RF Coil	0Ω		38959		
L5	FM Osc. Coil	0Ω		38960		
L6	Fil. Choke	.4Ω		38884		
L7A	Loop Ant.	.8Ω		13893		Chassis P-7
B	Loop Ant.			650189A-G1		Chassis P-8
L8	Wave Trap	13Ω		38996		
L9	AM Antenna Loading Coil	2Ω		38963		
L10	RF Choke	.4Ω		38884		
L11	AM RF Coil	65Ω	4Ω	38961		
L12	RF Choke	.4Ω		38884		
L13	RF Choke	.4Ω		38884		
L14	AM Osc. Coil	2.7Ω		38962		Tap at .4Ω
L15A	1st IF FM	.5Ω		38957		
B	1st IF AM	9.4Ω		38957		
L16	Fil. Choke	.4Ω		38884		
L17A	2nd IF FM	10Ω	.4Ω	38950		Includes Resistance on AM Pri.
B	2nd IF AM			38950		

PARTS LIST AND DESCRIPTIONS (Continued)

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES	
	CAP.	VOLT	CAPEHART PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.		
C49	470	500	25285	1468-0005	D6-471	5W5T5	GP2K-471	1FM-35	Tone Comp.	
C50	.01	600	25186	P688-01	D6-103	PTE6S1	821-01	6TM-S1	Audio Coupling	
C51	.003	600	25184	P688-003	D6-302	PTE6D3	GP2-333-302	6TM-D3	Output Plate	
C52	.003	600	25184	P688-003	D6-302	PTE6D3	GP2-333-302	6TM-D3	Output Plate	
C53	.02	600	25195	P688-02	DF-203	PTE6S2		6TM-S2	Audio Coupling	
C54	.005	600	25031	P688-005	D6-502	PTE6D5	811-005	6TM-D5	Line Filter	
C55	1500		25273	S11500	D6-152	1W5D15	GP2L-152	29C8	RF Bypass	*
C56	.005	600	25031	P688-005	D6-502	PTE6D5	811-005	6TM-D5	Line Filter	*

* Not used in all models.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	CAPEHART PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	
R1A	3.2Meg		78158	Q13-140			Volume Control - Front
B	3.2Meg			M13-140			Volume Control - Rear
C	Switch			76-1			Attach to R1A Per Instructions
R2A	3.2Meg		78159				Bass Control - Front
B	500K						Treble Control - Rear

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	CAPEHART PART No.	IRC PART No.	
R3	1Meg	½	77181	BTS-1Meg	AVC Network
R4	220KΩ	½	77178	BTS-220K	Antenna Loading
R5	1Meg	½	77181	BTS-1Meg	RF Amp. Grid
R6	220Ω	½	77186	BTS-220	RF Amp. Cathode
R7	33KΩ	½	77183	BTS-33K	RF Amp. Screen
R8	1000Ω	½	77233	BTS-1000	RF Amp. Plate Decoupling
R9	47Ω	½	77219		Parasitic Suppressor
R10	100KΩ	½	77167	BTS-100K	AM Converter Grid
R11	1000Ω	½	77233	BTS-1000	AM Converter Decoupling
R12	22KΩ	½	77169	BTS-22K	AM Osc. Grid
R13	10KΩ	1	77022		AM Osc. Anode
R14	100KΩ	½	77167		1st FM IF Transformer Shunt
R15	2200Ω	½	77184	BTS-2200	FM Converter Cathode
R16	1000Ω	½	77233	BTS-1000	FM Converter Decoupling
R17	10KΩ	½	77180		FM Osc. Grid
R18	1000Ω	½	77233	BTS-1000	FM Osc. Plate
R19	1Meg	½	77181	BTS-1Meg	1st IF Amp. Grid
R20	68Ω	½	77245		1st IF Amp. Cathode
R21	33KΩ	½	77183	BTS-33K	1st IF Amp. Screen
R22	1000Ω	½	77233	BTS-1000	1st IF Amp. Plate Decoupling
R23	100KΩ	½	77167		2nd FM IF Transformer Shunt
R24	68Ω	½	77245		2nd IF Amp. Cathode
R25	220Ω	½	77186	BTS-220	2nd IF Amp. Cathode
R26	33KΩ	½	77183	BTS-33K	2nd IF Amp. Screen
R27	1000Ω	½	77233	BTS-1000	2nd IF Amp. Plate Decoupling
R28	100KΩ	½	77167		3rd FM IF Transformer Shunt
R29	220Ω	½	77186	BTS-220	3rd IF Amp. Cathode
R30	33KΩ	½	77183	BTS-33K	3rd IF Amp. Screen
R31	1000Ω	½	77233	BTS-1000	3rd IF Amp. Plate Decoupling
R32	1000Ω	½	77233	BTS-1000	3rd IF Amp. Decoupling
R33	15KΩ	½	77246	BTS-15K	Ratio Det. Diode Load
R34	22KΩ	½	77169	BTS-22K	De-emphasis
R35	100KΩ	½	77167	BTS-100K	Tone Compensation - See Note 1
R36	220KΩ	½	77178	BTS-220K	AVC Network
R37	1Meg	½	77181	BTS-1Meg	AVC Network
R38	470KΩ	½	77173	BTS-470K	AVC Network
R39	47KΩ	½	77172	BTS-47K	Diode Filter
R40	470KΩ	½	77173	BTS-470K	AVC Network
R41	10Meg	½	77182	BTS-10Meg	AF Amp. Grid
R42	220KΩ	½	77178	BTS-220K	AF Amp. Plate
R43	4.7Meg	½	77187	BTS-4.7Meg	Delayed AVC Network
R44	10Meg	½	77182	BTS-10Meg	Phase Inv. Grid

PARTS LIST AND DESCRIPTIONS (Continued)

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	CAPEHART PART No.	MEISSNER PART No.	
L18	Fil. Choke	.4Ω		38884		
L19A	3rd IF FM	10Ω	.3Ω	38951		Includes Resistance on AM Pri.
B	3rd IF AM		10Ω	38951		
L20	Fil. Choke	.4Ω		38884		
L21	Ratio Det. Trans.	1.5Ω	.1Ω	38952		
L22	Fil. Choke	.4Ω		38884		

PHONO CARTRIDGE and NEEDLE

ITEM No.	REPLACEMENT DATA								REMARKS
	CAPEHART PART No.	ASTATIC PART No.		SHURE PART No.		ELECTRO-VOICE PART No.		
		CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	
M1		ACD-2	A-1 A-3	W22AB	A62A A65MG	96-T	0-1 or S-1 and 0-3 or S-3	

ASTATIC, SHURE AND ELECTRO-VOICE NEEDLE LISTINGS SHOWN ABOVE ARE SPECIFIED FOR THE RESPECTIVE REPLACEMENT CARTRIDGES LISTED.

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					CAPEHART PART No.		
M2	Bayonet	6-8	.25	Blue	42185		Type # 44
M3	Bayonet	6-8	.25	Blue	42185		Type # 44
M4	Bayonet	6-8	.25	Blue	42185		Type # 44
M5	Bayonet	6-8	.25	Blue	42185		Type # 44

MISCELLANEOUS

ITEM No.	PART NAME	CAPEHART PART No.	NOTES
M6	Switch	90269	Function
M7	Printed Circuit	77462	Tone
M8	Tuning Gang	17210	
A8	Dual Trimmer	26278	AM Osc. Adjustment
A9			AM RF Adjustment
A10	Trimmer	26279	AM Antenna Adjustment
A21	Trimmer	26231	FM Osc. Adjustment
A22	Dual Trimmer	26280	FM RF Adjustment
A23			FM Antenna Adjustment
	AM Dial Glass	31439	
	FM Dial Glass	31440	
	Dial Pointer	04133	
	Knob	59492	Volume (Model 35P7)
	Knob	59495	Tuning (Model 35P7)
	Knob	59498	Switch (Model 35P7)
	Knob	59496	Bass Tone (Model 35P7)
	Knob	59497	Treble Tone (Model 35P7)
	Knob	59534	Volume, Tuning (Models 1002F, 1003M, 1004B)
	Knob	59535	Switch (Models 1002F, 1003M, 1004B)
	Knob	59537	Treble Tone (Models 1002F, 1003M, 1004B)

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn tuning gang fully closed and set pointer to the small dots at the low frequency end of the dial scale.

AM ALIGNMENT

Loop should be maintained in same relative position to chassis as when receiver is in cabinet. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to Pin 7 (grid) of 6BE6, (V3). Low side to chassis.	455KC (400 ∿ Mod.)	AM (Third pos. clockwise)	Tuning gang fully open	Across voice coil	A1, A2, A3, A4, A5, A6	Adjust for maximum output.
2.		Loop	"	"	"	"	A7	Fashion loop of several turns of wire and connect generator across loop to radiate signal into receiver loop. Adjust A7 for MINIMUM output.
3.		Loop	1600KC	"	1600KC	"	A8, A9	Radiate signal as in step 2. Adjust for maximum output.
4.		"	1500KC	"	1500KC	"	A10	"
5.		"	600KC	"	600KC	"	A11, A12	Adjust for maximum output. Repeat steps 3, 4 and 5 until no further improvement can be made.

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

Connect two matched 100KΩ (± 1%) resistors in series from Point Ⓐ to chassis. The junction of these two resistors is alignment Point Ⓒ as shown on the schematic.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
6.	.001MFD	High side to Pin 4 (grid) of 6SK7, (V5). Low side to chassis.	10.7MC (Unmod.)	FM (Max. CW)	Tuning gang fully open	DC probe to Point Ⓐ. Common to chassis.	A13, A14	Turn A13 fully out, (CCW). Adjust A14 for maximum deflection.
7.	"	High side to Pin 4 (grid) of 6SK7 (V4). Low side to chassis.	"	"	"	"	A15, A16	Turn A15 fully out. Adjust A16 for maximum deflection, then adjust A15 for maximum deflection.
8.	"	High side to Pin 4 (grid) of 6SK7 (V3). Low side to chassis.	"	"	"	"	A17, A18	Turn A17 fully out. Adjust A18 for maximum deflection, then adjust A17 for maximum deflection.
9.	"	High side to Pin 2 (grid) of 12AT7, (V2). Low side to chassis.	"	"	"	"	A19, A20	Turn A19 fully out. Adjust A20 for maximum deflection, then adjust A19 for maximum deflection.
10.	"	"	"	"	"	DC probe to Point Ⓑ. Common to Point Ⓒ.	A13	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

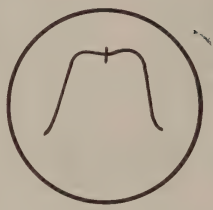


FIG. 1

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

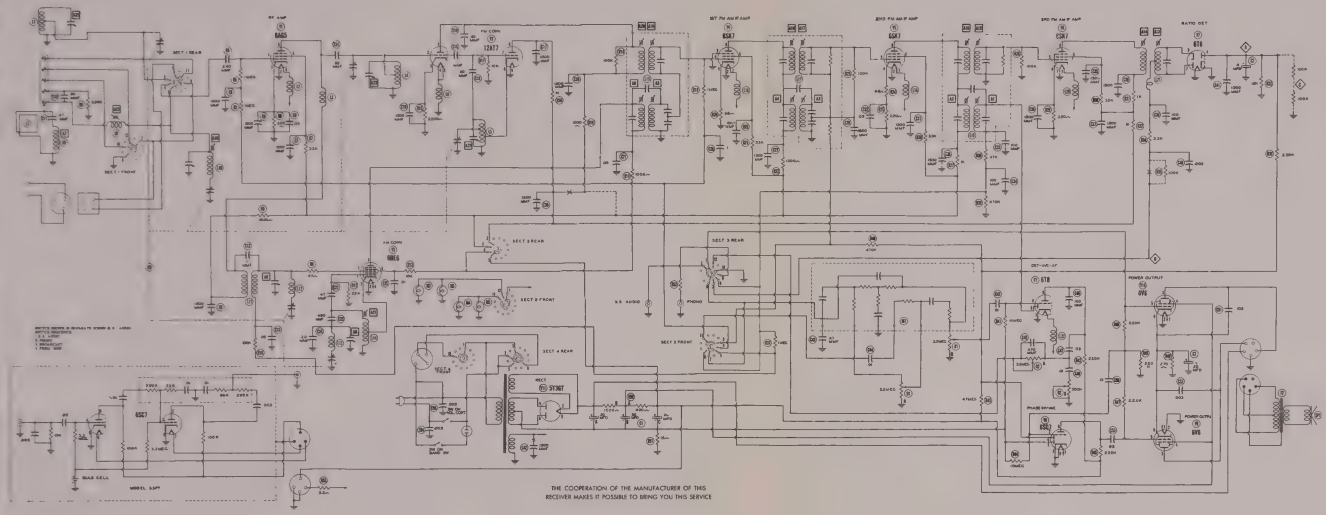
Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	SCOPE CONNECT	ADJUST	REMARKS
6.	.001MFD	High side to Pin 4 (grid) of 6SK7, (V5). Low side to chassis.	10.7MC (450KC SWP)	FM (Max. CW)	Point of non-interference	Vert. amp. to Point Ⓐ Low side to chassis.	A13, A14	Disconnect stabilizer capacitor C2 and connect a 350MMF capacitor across secondary of L21. Adjust A14 for a single broad peak centered at 10.7MC. Then remove the 350MMF. capacitor and adjust A13 for a double peaked symmetrical curve similar to figure 1.
7.	"	High side to Pin 4 (grid) of 6SK7, (V4). Low side to chassis.	"	"	"	"	A15, A16	Turn A15 fully out. Adjust A16 and then A15 for maximum amplifude and symmetry as per figure 1.
8.	"	High side to Pin 4 (grid) of 6SK7, (V3). Low side to chassis.	"	"	"	"	A17, A18	Turn A17 fully out. Adjust A18 and then A17 for maximum amplitude and symmetry as per figure 1.
9.	"	High side to Pin 2 (grid) of 12AT7, (V2). Low side to chassis.	"	"	"	"	A19, A20	Turn A19 fully out. Adjust A20 and then A19 for maximum amplitude and symmetry as per figure 1.
10.	"	"	"	"	"	Vert. amp. to Point Ⓑ. Low side to chassis.	A13, A14	Reconnect capacitor C2. Adjust A13 so 10.7MC occurs at center of "S" curve as shown in figure 2. Adjust A14 for maximum amplitude and straightness of diagonal line.

FIG. 2

FM RF ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
11.	300Ω carbon resistor	High side thru 300Ω to ungrounded "FM" terminal. Low side to chassis.	108MC (Unmod.)	FM	108MC	DC probe to Point Ⓐ. Common to chassis.	A21, A22, A23	Turn A21, A22 and A23 to MINIMUM capacity. Adjust A21 to first peak towards max. capacity. Then adjust A22 and A23 for maximum deflection.
12.	"	"	88MC	"	88MC	"	L5, L4, L1	Check coils with a tuning wand and if necessary expand or compress coil turns for maximum deflection. If coils are changed repeat steps 11 and 12 until no further improvement can be made.



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FUNCTION SWITCH IN EITHER AM OR FM POSITION
ǂ TAKEN IN FM POSITION
▲ TAKEN IN AM POSITION

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6AG5	-.1VDC	1.6VDC	0V	6.2VAC	ǂ185VDC ▲200VDC	ǂ110VDC ▲130VDC	1.6VDC		
V 2	12AT7	ǂ185VDC	0V	ǂ4.8VDC	6.2VAC	6.2VAC	ǂ175VDC	ǂ6.3VDC	0V	0V
V 3	6BE6	ǂ4-11VDC	0V	0V	6.3VAC	▲200VDC	▲115VDC	-.1VDC		
V 4	6SK7	0V	0V	0V	-.1VDC	.1VDC	ǂ80VDC ▲90VDC	6.2VAC	ǂ175VDC ▲190VDC	
V 5	6SK7	0V	0V	0V	-.1VDC	ǂ3.2VDC ▲3.6VDC	ǂ100VDC ▲105VDC	6.2VAC	▲175VDC ▲190VDC	
V 6	6SK7	0V	0V	0V	0V	ǂ3VDC	ǂ85VDC	6.2VAC	ǂ170VDC	
V 7	6T8	-.4VDC	-.7VDC	-.4VDC	0V	6.2VAC	-.6VDC	0V	-.4VDC	126VDC
V 8	6SQ7	0V	-.6VDC	0V	.3VDC	-1.8VDC	145VDC	6.3VAC	0V	
V 9	6V6GT	0V	0V	ǂ255VDC ▲260VDC	ǂ205VDC ▲220VDC	.1VDC	.1VDC	6.3VAC	15VDC	
V 10	6V6GT	0V	0V	ǂ255VDC ▲280VDC	ǂ205VDC ▲220VDC	.1VDC	0V	6.3VAC	15VDC	
V 11	5Y3GT	-1.8VDC	270VDC	0V	285VAC	0V	285VAC	0V	270VDC	

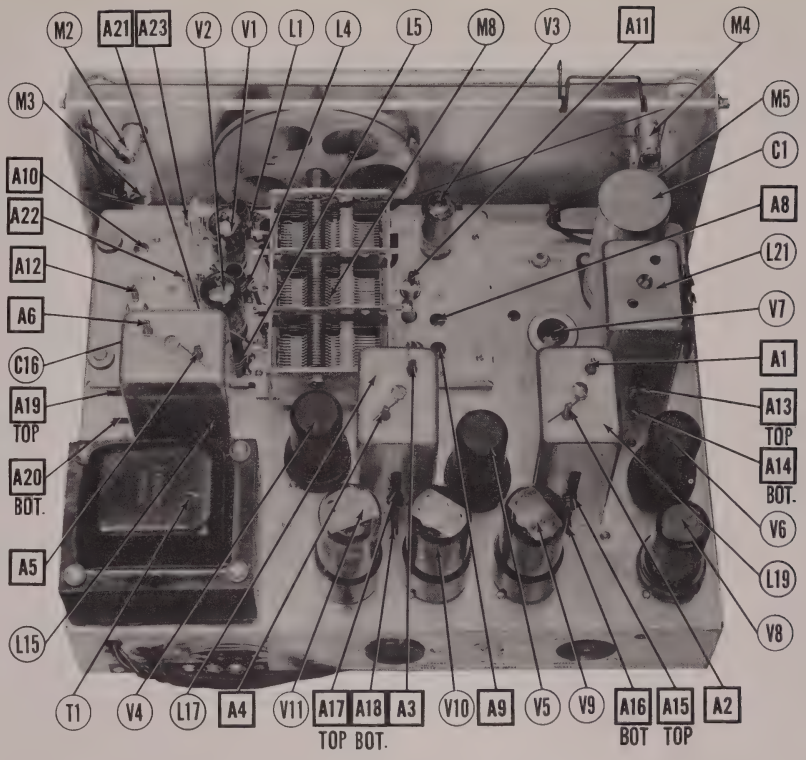
ǂ TAKEN WITH VACUUM TUBE VOLTMETER

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6AG5	ǂ2.7Meg ▲3.5Meg	320Ω	0Ω	.4Ω	ǂ2.4KΩ	ǂ34KΩ	320Ω		
V 2	12AT7	ǂǂ2.4KΩ	0Ω	2.2KΩ	.4Ω	.4Ω	ǂǂ2.4KΩ	10KΩ	0Ω	0Ω
V 3	6BE6	22KΩ	.4Ω	0Ω	.1Ω	ǂ▲2.4KΩ	ǂ▲11KΩ	1.6Meg		
V 4	6SK7	0Ω	0Ω	0Ω	ǂ1.7Meg ▲2.5Meg	68Ω	ǂ34KΩ	.4Ω	ǂ2.4KΩ	
V 5	6SK7	0Ω	0Ω	0Ω	1.9Meg	290Ω	ǂ34KΩ	.4Ω	ǂ2.4KΩ	
V 6	6SK7	0Ω	0Ω	0Ω	.4Ω	220Ω	ǂǂ35KΩ	.4Ω	ǂǂ2.4KΩ	
V 7	6T8	Inf.	15KΩ	Inf.	0Ω	.4Ω	520KΩ	0Ω	10Meg	ǂ220KΩ
V 8	6SQ7	0Ω	10Meg	0Ω	235KΩ	15Ω	ǂ220KΩ	0Ω	.1Ω	
V 9	6V6GT	0Ω	0Ω	ǂ180Ω	ǂ1KΩ	440KΩ	2.2KΩ	.1Ω	270Ω	
V 10	6V6GT	0Ω	0Ω	ǂ180Ω	ǂ1KΩ	440KΩ	Inf.	.1Ω	270Ω	
V 11	5Y3GT	15Ω	35KΩ	Inf.	135Ω	Inf.	135Ω	Inf.	35KΩ	

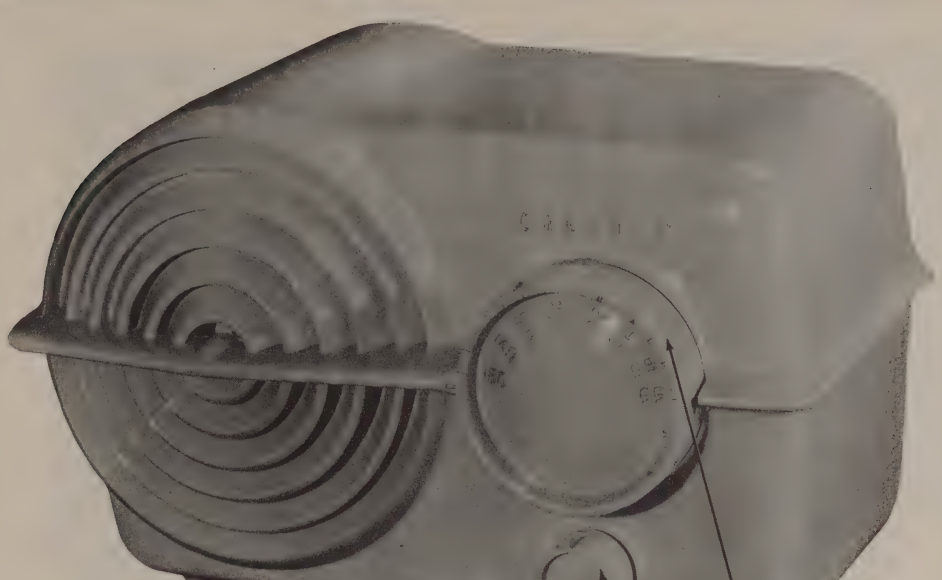
ǂ MEASURED FROM PIN 8 OF V11

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.



SET 135 FOLDER 4

CROSLEY MODELS 11-114U, 11-115U, 11-116U, 11-117U, 11-118U, 11-119U



CROSLEY MODELS 11-114U, 11-115U, 11-116U, 11-117U, 11-118U, 11-119U

CROSLEY, MODEL 11-116U

TRADE NAME	Crosley, Models, 11-114U, 11-115U, 11-116U, 11-117U, 11-118U, 11-119U (Ch. 330)
MANUFACTURER	Crosley Corp., 1329 Arlington St., Cincinnati, Ohio
TYPE SET	AC-DC Operated Superheterodyne Receiver with Loop Antenna
TUBES (FIVE)	Types 12BE6 Converter, 12BA6 IF Amp., 12AV6 DET-AVC-AF, 50C5 Power Output 35W4 Rectifier
POWER SUPPLY	105-125 Volts AC-DC RATING .27 Amp., @ 117 Volts AC
TUNING RANGE—BROADCAST	540-1600KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set dial turn tuning gang fully closed and set the last referance mark on the dial even with index mark on the cabinet. Use isolation transformer if available. If not connect a .1MFD capacitor in series with low side of signal generator and B-. Loop should be maintained in same relative position to chassis as when receiver is in cabinet. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	200MMF	High side to stator on rear section of tuning gang. Low side to B-.	455KC (400~ Mod.	Tuning gang fully open.	Across voice coil.	A1, A2, A3, A4	Adjust for maximum output.
2.		Loop	1620KC	"	"	A5	Fashion loop of several turns of wire and radiate signal into loop of receiver Adjust for maximum output.
3.		Loop	1400KC	Tune for max. output.	"	A6	"

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PARTS LIST AND DESCRIPTIONS

CROSLEY
MODEL 11-116U

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		CROSLEY PART No.	STANDARD REPLACEMENT		
V1	Converter	12BE6	12BE6	7CH	
V2	IF Amplifier	12BA6	12BA6	7BK	
V3	DET-AVC-AF	12AV6	12AV6	7BT	
V4	Power Output	50C5	50C5	7CV	
V5	Rectifier	35W4	35W4	5BD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	CROSLEY PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	
C1A	50	150	B-149457	PRSI50/50-30		EDL5315		TVA-2450	Filter Red
B	30	150							Filter Blue
C2	.047	200	39477-45	P288-047	DF-503	PTE4S5		2TM-S47	AVC Filter
C3	50		C-137727-21	SI50	D6-500	5W5Q5	GP1K-500	19C28	Osc. Grid Cap.
C4A	220		C-144675-1	SI220	D6-221	5W5T25	GP2K-221		Diode RF Filter
B	2000			BPD-002	DD-202	PTE6D2	801-002	34C3	Audio Coupling
C	220			SI220	D6-221	5W5T25	GP2K-221		AF Amp. Plate
D	5000			BPD-005	DD-502	PTE6D5	811-005		Audio Coupling
C5	.022	400	39477-43	P488-022	DF-203	PTE4S5		4TM-S22	Output Plate
C6	.068	200	39477-46	P288-068		PTE4P1		73P52	Line Isolation
C7	.047	200	39477-45	P288-047	DF-503	PTE4S5		2TM-S47	Line Filter

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	CROSLEY PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	
R1A	1Meg	½	39368-14	Q13-137	AG-63-Z	B-70-S	Volume Control
B	Shaft		Not req.	Not req.	KSS-3	Not req.	Attach to R1A per instructions
C	Switch		Not req.	76-1	SWB	Not req.	Attach to R1A per instructions

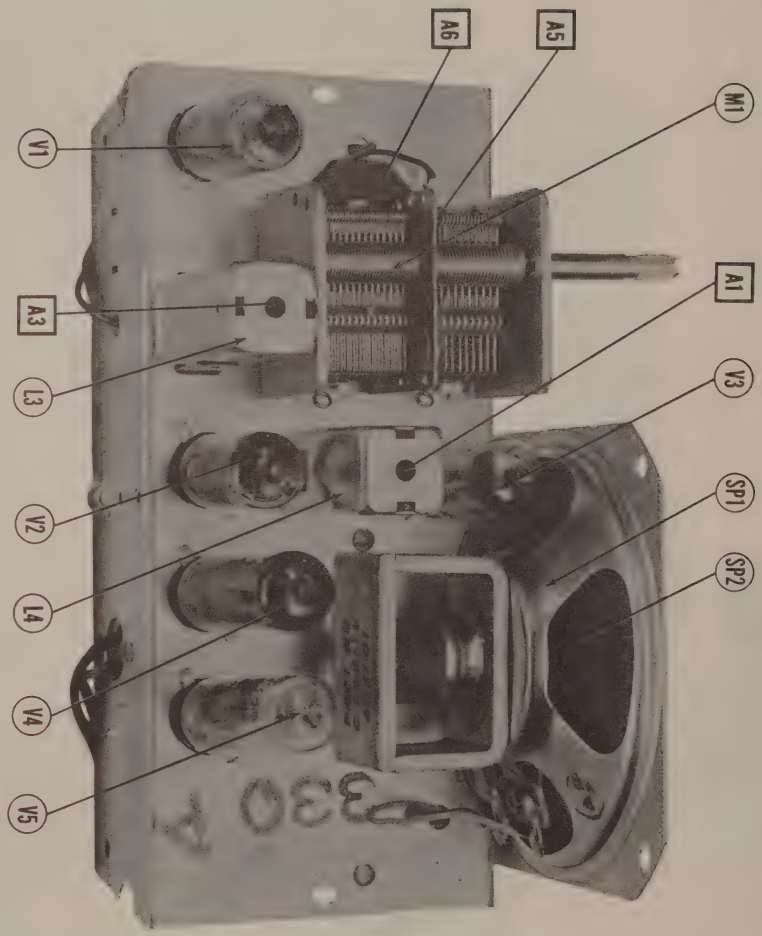
RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	CROSLEY PART No.	IRC PART No.	
R2	22KΩ	½	39373-60	BTS-22K	Osc. Grid
R3	3.3Meg	½	39373-100	BTS-3.3Meg	AVC Network
R4	47KΩ	½	39373-67	BTS-47K	Diode Filter
R5	10Meg	½	39373-107	BTS-10Meg	AF Amp. Grid
R6	220KΩ	½	39373-80	BTS-220K	AF Amp. Plate
R7	470KΩ	½	39373-87	BTS-470K	Output Grid
R8	150Ω	1	39373-16	BW-½-150/	Output Cathode - Wire Wound
R9	1200Ω	1	39374-114	BTA-1200	Filter

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		CROSLEY PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T1	2.6KΩ	3.3Ω	200Ω	.6Ω	136131-1	A-3876 ①	A-3025 ①	RO-302 ①	① Drill one new mounting hole.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA: CROSLEY PART No.	JENSEN PART No.	QUAM PART No.	INSTALLATION NOTES
	FIELD	V. C. IMP		ST113		
SP1	PM	3.3Ω	139631	Model P4-X	4A1	
	CONE DIA.	V. C. DIA.				
SP2	4"	9/16"				

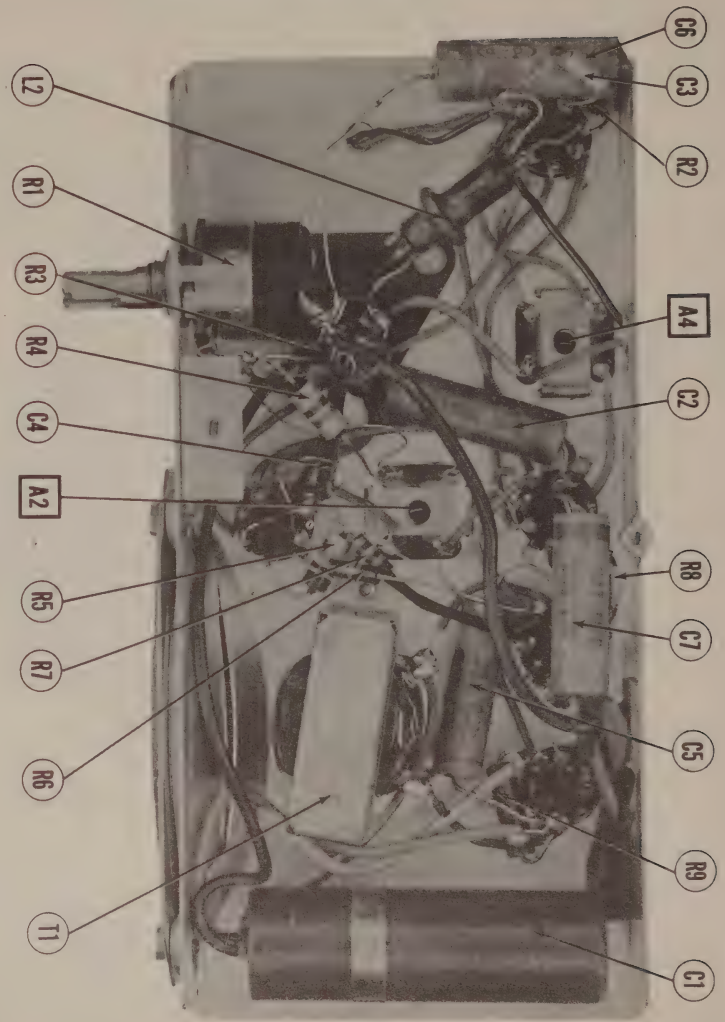
R F COILS

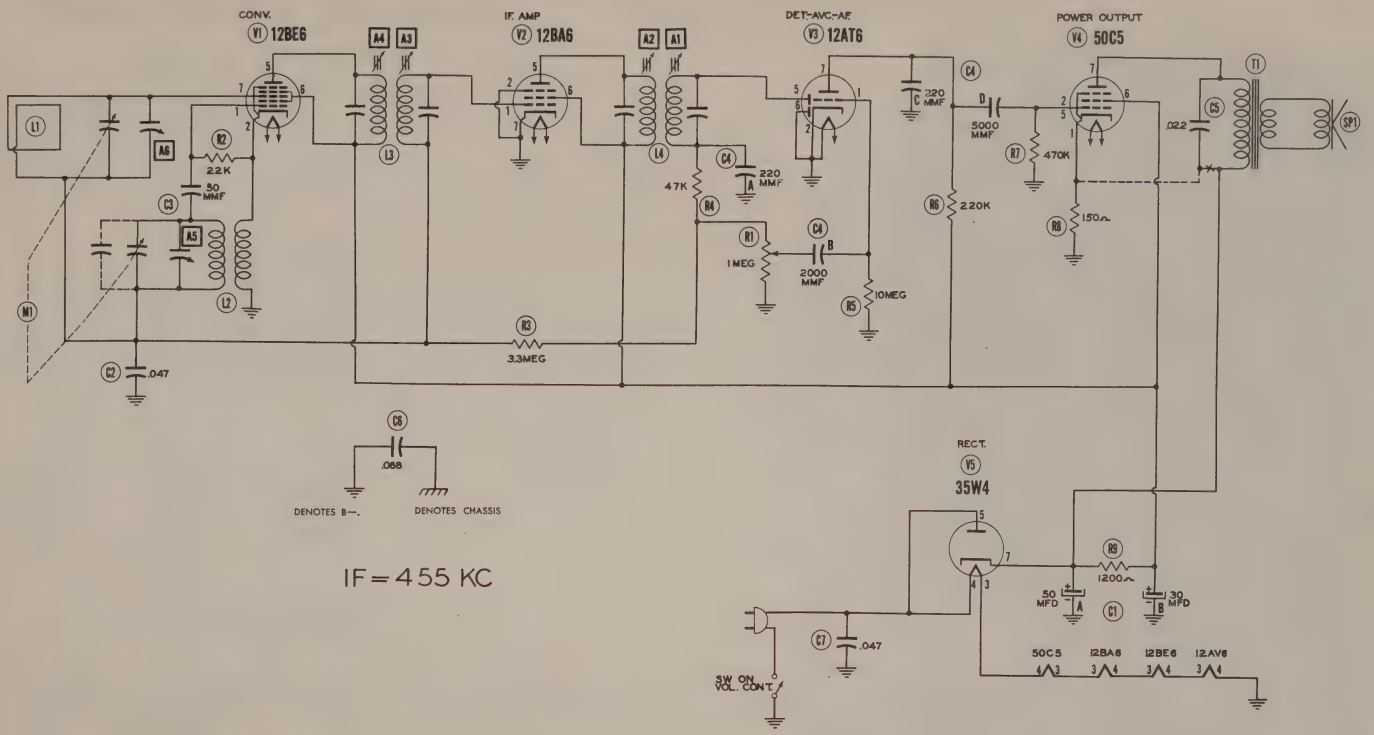
ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: CROSLEY PART No.	MEISSNER PART No.	
L1	Loop. Ant.	3.2Ω		AC-149480		
L2	Osc. Coil	.9Ω	9.8Ω	AW-148259		
L3	1st. IF	10Ω	10Ω	AC-139919-4		
L4	2nd. IF	19Ω	19Ω	AC-139919-5		

MISCELLANEOUS

ITEM No.	PART NAME	CROSLEY PART No.	NOTES
M1	2 Gang Var. Cap.	B-149473	(29-469MMF, 190147MMF)
	Cabinet	AB-149495-1	Model 11-114U
	Cabinet	AB-149495-2	Model 11-115U
	Cabinet	AB-149495-3	Model 11-116U
	Cabinet	AB-149495-4	Model 11-117U
	Cabinet	AB-149495-5	Model 11-118U
	Cabinet	AB-149495-6	Model 11-119U

CHASSIS—BOTTOM VIEW





IF = 455 KC

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12BE6	6-8.3VDC	0V	24VAC	12VAC	90VDC	90VDC	-.8VDC
V 2	12BA6	-.8VDC	0V	35VAC	24VAC	90VDC	90VDC	0V
V 3	12AV6	-.8VDC	0V	12VAC	0V	-.6VDC	0V	70VDC
V 4	50C5	7VDC	0V	35VAC	83VAC	0V	90VDC	115VDC
V 5	35W4	0V	90VDC	83VAC	117VAC	117VAC	108VAC	120VDC

‡ TAKEN WITH VACUUM TUBE VOLTMETER

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12BE6	22KΩ	.9Ω	25Ω	12Ω	†1.2KΩ	†1.2KΩ	4.3Meg
V 2	12BA6	4.3Meg	0Ω	36Ω	25Ω	†1.2KΩ	†1.2KΩ	0Ω
V 3	12AV6	10Meg	0Ω	13Ω	0Ω	1Meg	0Ω	†220KΩ
V 4	50C5	150Ω	470KΩ	36Ω	85Ω	470KΩ	†1.2KΩ	†200Ω
V 5	35W4	Inf.	†1.2KΩ	85Ω	125Ω	125Ω	120Ω	40KΩ

† MEASURED FROM PIN 7 OF V5

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

EICOR
MODEL 15

EICOR
MODEL 15

TRADE NAME	Eicor, Model 15
MANUFACTURER	Eicor, Inc., 1501 West Congress St., Chicago 7, Illinois
TYPE SET	AC Operated Tape Recorder
TUBES (FIVE)	Types 6SJ7 Mic. Pre-Amp. - AF Amp., 6SJ7 AF Amp., 6J5 Bias Oscillator, 6K6GT Power Output, 6X5GT Rectifier
POWER SUPPLY	110-120 Volts AC RATING .3 Amp. @ 117 Volts AC

FOR SERVICE INFORMATION ON MECHANICAL UNIT, SEE EICOR MODEL 1000 IN PHOTOFACT SET # 90 FOLDER #4 OR RECORD CHANGER MANUAL CM-3

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: EICOR PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
V1	Mic. Amp.-AF Amp.	6SJ7	6SJ7	8N	
V2	AF Amplifier	6SJ7	6SJ7	8N	
V3	Bias Oscillator	6J5GT	6J5GT	6Q	
V4	Power Output	6K6GT	6K6GT	7S	
V5	Rectifier	6X5GT	6X5GT	6S	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: EICOR PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	30	350		AF64H		UP3335		TVL-2622	■ Filter
B	20	350							▲ Filter
C2	20	350		AF4I		UP2045		TVL-1660	Decoupling
C3	25	25		PRS25/25		BR252A		TVA-1205	AF Amp. Cathode *
C4	25	25		PRS25/25		BR252A		TVA-1205	Output Cathode
C5	.01	600		P688-01	D6-103	PTE6S1	821-01	6TM-S1	Audio Coupling *
C6	.05	400		P488-05	DF-503	PTE4S5		4TM-S5	AF Amp. Screen
C7	.01	600		P688-01	D6-103	PTE6S1	821-01	6TM-S1	Audio Coupling
C8	100	500		1468-0001	D6-101	5W5T1	GPIK-100	1FM-31	Tone Comp. *
C9	.002	600		P688-002	D6-202	PTE6D2	GP2M-002	6TM-D2	Tone Comp. *
C10	.05	400		P488-05	DF-503	PTE4S5		4TM-S5	2nd. AF Amp. Screen
C11	.001	600		P688-001	D6-102	PTE6D1	GP2L-001	6TM-D1	Audio Coupling
C12	.001	600		P688-001	D6-102	PTE6D1	GP2L-001	6TM-D1	Tone Comp.
C13	.01	600		P688-01	D6-103	PTE6S1	821-01	6TM-S1	Audio Coupling
C14	.001	600		P688-001	D6-102	PTE6D1	GP2L-001	6TM-D1	Ind. Filter
C15	.01	600		P688-01	D6-103	PTE6S1	821-01	6TM-S1	Fixed Trimmer
C16	.005	600		P688-005	D6-502	PTE6D5	811-005	6TM-D5	Osc. Grid Cap.
C17	.05	200		P288-05	DF-503	PTE4S5		2TM-S5	Audio Coupling

* Not used in all models.

CONTROLS

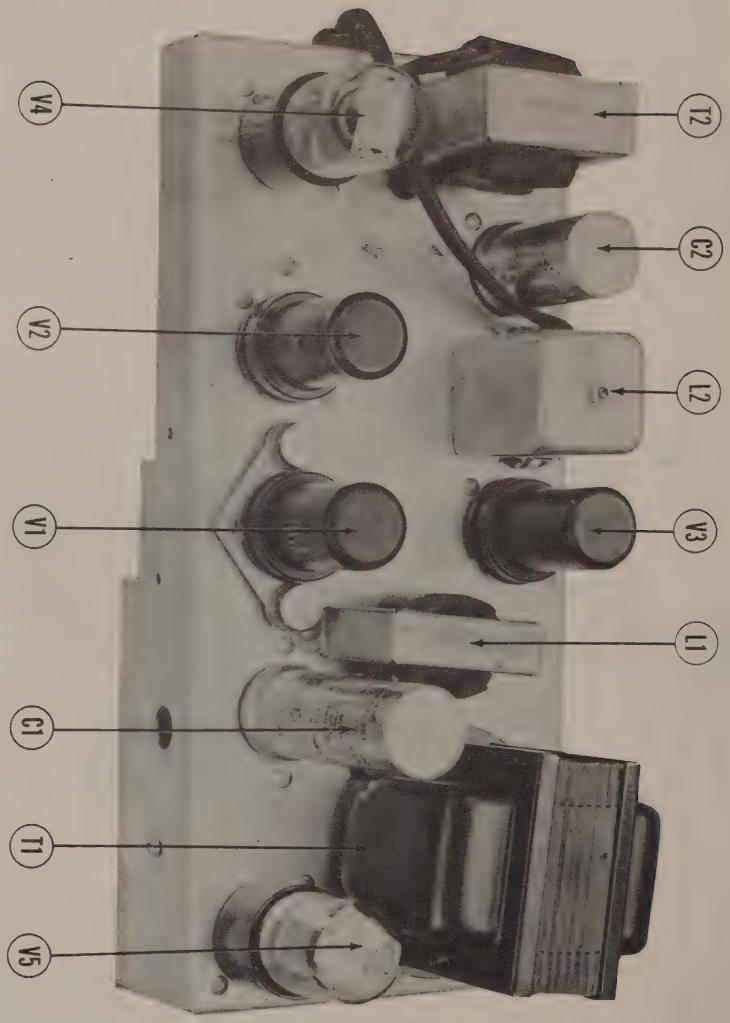
ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: EICOR PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	500KΩ	½	TR101-3155	Concentrikit			
B	500KΩ	½		B11-133 *		SBB-672-S	Tone Control - Front
C	Shaft end	½		B11-133 *			Volume Control & SW - Rear
D	Switch	½		E-202 *			Attach per instructions in "Concentrikit"
				76-1 *			Attach per instructions in "Concentrikit"

* Additional parts to be used with "Concentrikit".

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: EICOR PART No.	IRC PART No.	IDENTIFICATION CODES
R2	1Meg	½		BTS-1Meg	Mike Amp.-AF Amp. Grid - See Note 2
R3	1500Ω	½		BTS-1500	Mike Amp.-AF Amp. Cathode - See Note 1
R4	2.2Meg	½		BTS-2.2Meg	Mike Amp.-AF Amp. Screen
R5	270KΩ	½		BTS-270K	Mike Amp.-AF Amp. Plate
R6	47KΩ	½		BTS-47K	Decoupling
R7	1500Ω	½		BTS-1500	AF Amp. Cathode
R8	2.2Meg	½		BTS-2.2Meg	AF Amp. Screen
R9	470KΩ	½		BTS-470K	AF Amp. Plate
R10	100KΩ	½		BTS-100K	AF Amp. Decoupling
R11	5600Ω	½		BTS-5600	Bias Osc. Grid - See Note 3
R12	47KΩ	½		BTS-47K	Bias Osc. Cathode
R13	220KΩ	½		BTS-220K	Indicator Network

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	EICOR PART No.	IRC PART No.	
R14	2.2Meg	½		BTS-2.2Meg	Indicator Network
R15	1Meg	½		BTS-1Meg	Output Grid - See Note 4
R16	470Ω	1		BTA-470	Output Cathode
R17	1Meg	½		BTS-1Meg	Feedback
R18	1Meg	½		BTS-1Meg	Feedback - See Note 1
R19	100Ω	½		BTS-100	Impedance Matching
R20	820Ω	1		BTA-820	Impedance Matching

Note 1 Not used in all models.
Note 2 Some models use 2.2Meg Resistor in this application.
Note 3 Some models use 8200Ω Resistor in this application.
Note 4 Some models use 470KΩ Resistor in this application.

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	EICOR PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	117VAC ② .3A	550VCT .042ADC	6.3V ② 1.9A			PC8403	P5150 ②	PV-60 ③

② Add series resistor to reduce plate voltage.
③ Drill new mounting holes.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		EICOR PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T2	4.6KΩ	3.2Ω	400Ω	.7Ω SEC 2 110Ω					

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			EICOR PART No.	JENSEN PART No.	QUAM PART No.	
SP1	FIELD PM CONE DIA.	V. C. IMP. 3.2Ω V. C. DIA.		ST108 Model P6-X	6A1	
SP2	6"	9/16"				

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA				INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 ↺)	EICOR PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
L1	.041A	520Ω	13 Henries		C1708 ①	C-2987 ①	R-1365 ①	① Drill one new Mtg. hole.

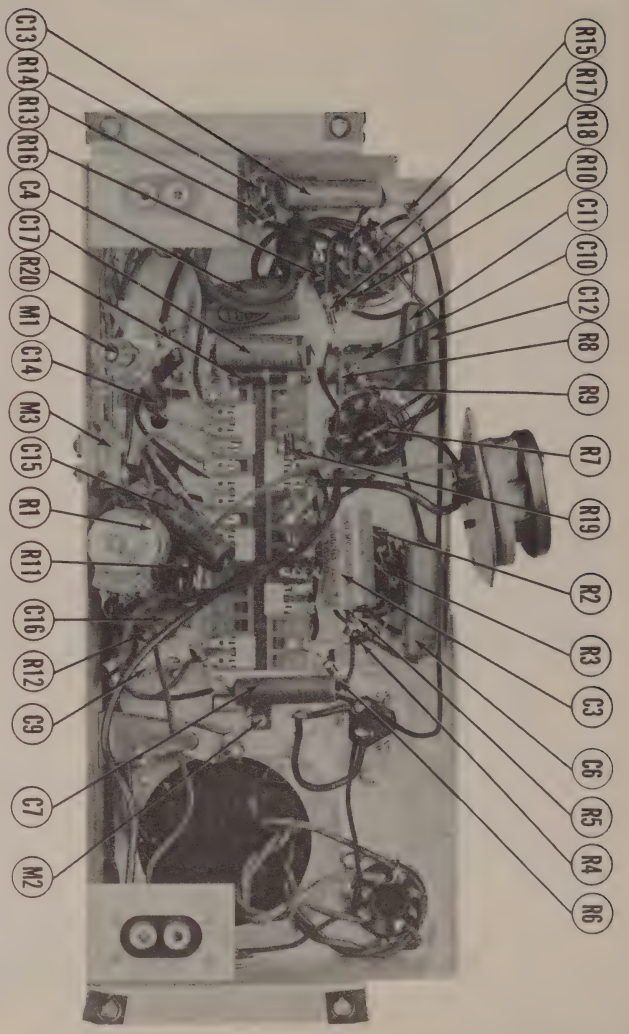
R F COILS

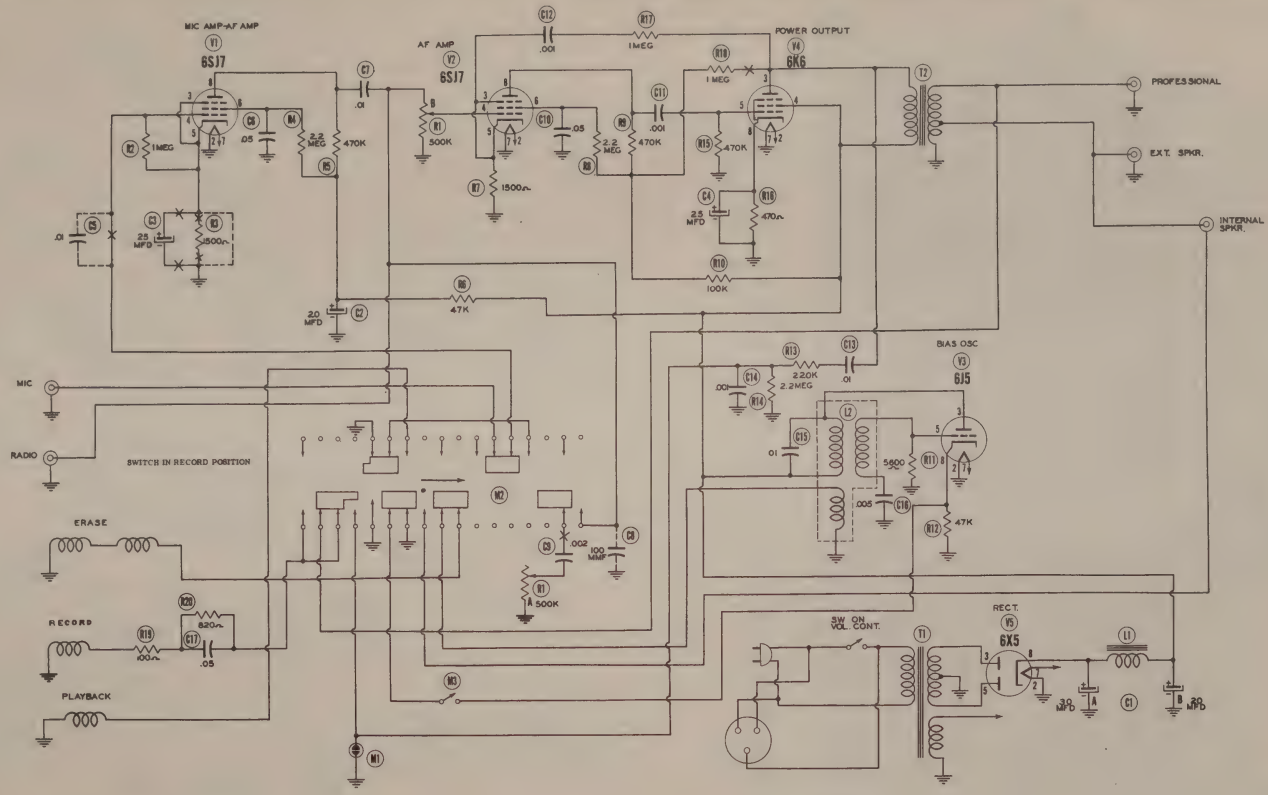
ITEM No.	USE	DC RES.		REPLACEMENT DATA	
		PRI.	SEC.	EICOR PART No.	MEISSNER PART No.
L2	Bias Osc. Coil	12Ω	3.6Ω SEC 2 .1Ω		

MISCELLANEOUS

ITEM No.	PART NAME	EICOR PART No.	NOTES
M1	Neon Lamp.		Type NE-51
M2	Switch		Record - Listen
M3	Switch		Erase Interlock

CHASSIS—BOTTOM VIEW





VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6SJ7	0V	0V	.8VDC	0V	.8VDC	20VDC	6.2VAC	135VDC
V 2	6SJ7	0V	6.2VAC	.7VDC	0V	.7VDC	20VDC	0V	48VDC
V 3	6J5	0V	0V	295VDC	295VDC	0V	0V	6.2VAC	18VDC
V 4	6K6GT	0V	6.2VAC	280VDC	295VDC	.6VDC	240VDC	0V	20VDC
V 5	6X5GT	0V	0V	275VAC	0V	275VAC	0V	6.2VAC	320VDC

▲ TAKEN WITH SWITCH IN RECORD POSITION
TAKEN WITH SWITCH IN LISTEN POSITION

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6SJ7	0Ω	0Ω	1.5KΩ	#250Ω ▲ 1Meg	1.5KΩ	†2.2Meg	.2Ω	†320KΩ
V 2	6SJ7	0Ω	.2Ω	1.5KΩ	0Ω	1.5KΩ	†2.2Meg	0Ω	†350KΩ
V 3	6J5	0Ω	0Ω	†530Ω	†520Ω	5.6KΩ	5.6KΩ	.2Ω	47KΩ
V 4	6K6GT	0Ω	.2Ω	†920Ω	†520Ω	1Meg	1.2Meg	0Ω	470Ω
V 5	6X5GT	0Ω	0Ω	220Ω	Inf.	220Ω	Inf.	.2Ω	70KΩ

† MEASURED FROM PIN 8 OF V5

THE COOPERATION OF THE MANUFACTURER OF THIS EQUIPMENT MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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135-6

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

FADA MODEL P-130

TRADE NAME	Fada, Model P-130
MANUFACTURER	Fada Radio And Electric Co., Inc., Belleville, New Jersey
TYPE SET	Three Power Operated Superheterodyne Receiver With Loop And Rod Antenna
TUBES (FIVE)	Types 1U4 RF Amp., 1R5 Converter, 1U4 IF Amp., 1U5 Det.-AVC-AF, 3V4 Power Output
POWER SUPPLY	105-125 Volts AC-DC Or 9 Volts "A" Supply And 90 Volts "B" Supply
RATING	.175 Amp. @ 117 Volts AC Or 50 MA @ 9 Volts DC And 21 MA @ 90 Volts DC
TUNING RANGE—BROADCAST	530-1650KC SHORT WAVE #1 7.4 - 23.5MC #2 2.3 - 7.6MC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn tuning gang fully open and set right hand edge of pointer even with the right hand end of the red dial scale lines.

Use battery power if possible. If AC power is used, use an isolation transformer when available. If not, connect a .1MFD capacitor in series with low side of the signal generator and B-.

Loop should be maintained in same relative position to chassis as when receiver is in cabinet.

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to Pin 6 (grid) of 1R5 (V2). Low side to chassis.	456KC (400 ∿ Mod.)	STD (CCW)	Tuning gang fully open	Across voice coil.	A1, A2, A3, A4	Adjust for maximum output. If AC power is used without an isolation transformer reduce dummy antenna to 200MMF to reduce modulation.
2.		Loop	1600KC	"	1600KC	"	A5	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for max. output.
3.		"	550KC	"	550KC	"	A6	Adjust for maximum output. Repeat steps 2 and 3 until no further improvement can be made.
4.		"	1400KC	"	1400KC	"	A7, A8	Adjust for maximum output.
5.	Direct	High side to "ext." antenna lead. Low side to chassis.	23MC	SW #1 (CW)	23MC	"	A9, A10, A11	"
6.	"	"	7MC	SW #2 (Center)	7MC	"	A12	"
7.	"	"	2.3MC	"	2.3MC	"	A13	Adjust for maximum output. Repeat steps 6 and 7 until no further improvement can be made.
8.	"	"	6MC	"	6MC		A14, A15	Adjust for maximum output.

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		FADA PART No.	STANDARD REPLACEMENT		
V1	RF Amplifier	1U4	1U4	6AR	
V2	Converter	1R5	1R5	7AT	
V3	IF Amplifier	1U4	1U4	6AR	
V4	Det.-AVC-AF	1U5	1U5	6BW	
V5	Power Output	3V4	3V4	6BX	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

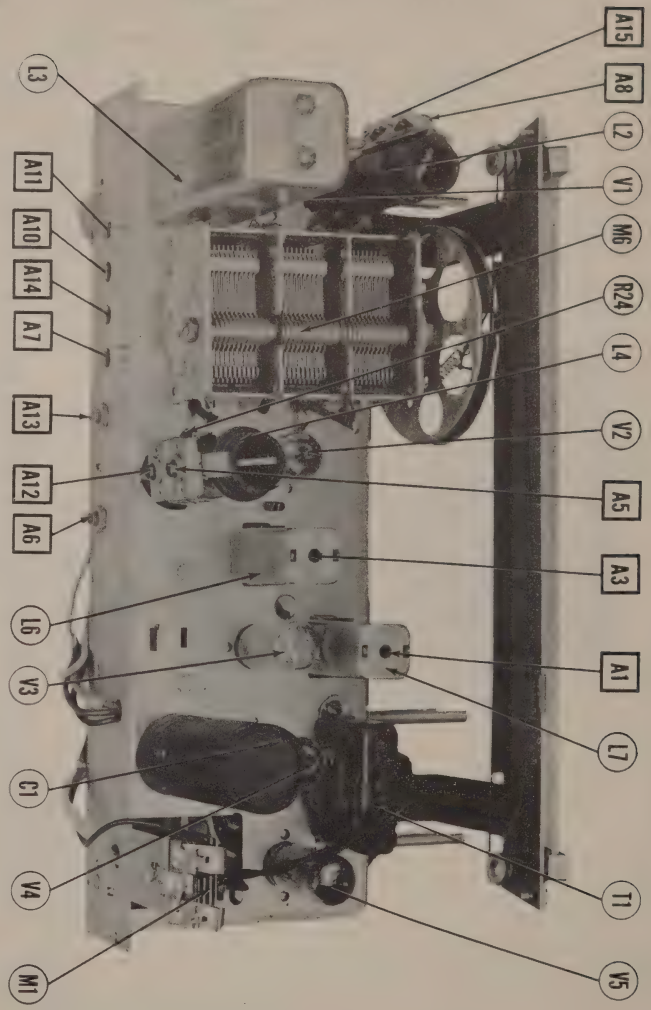
ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	FADA PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	
C1A	30	150	22.36	AF888D		UP44415		TVL-3440	Filter
B	40	150							▲ Filter
C	40	150							■ Filter
C2	150	15	22.13	PRS12/250		BRH1525A		TVA-1161	Filament Bypass
C3	150	15	22.13	PRS12/250		BRH1525A			Filament Bypass
C4	50		17.49	SI50	D6-500	5W5Q5	GP1 K-50	19C28	Ant. Coupling
C5	.0022	400	12.86	P688-0022	D6-222	PTE6D2	GP2M-0022	6TM-D22	RF Coupling
C6	2		17.78		TCZ-2.2				RF Coupling
C7	.0068	400	12.89	P688-0068	D6-682			6TM-D68	Fixed Padder
C8	220		17.22	SI220	D6-221	5W5T25	GP2K-220	19C13	RF Coupling
C9	.05	200	12.80	P288-05	DF-503	PTE4S5		2TM-S5	AVC Filter
C10	.05	200	12.80	P288-05	DF-503	PTE4S5		2TM-S5	Filament Bypass
C11	5000		17.44	BPD-005	DD-502	1D5D5	811-005	29C1	RF Amp. Dec.
C12	220		17.22	SI220	D6-221	5W5T25	GP2K-220	19C13	RF Coupling
C13	100		17.21	SI100	D6-101	5W5T1	GP1K-100	19C11	Osc. Grid Cap.
C14	2		17.78		TCZ-2.2				Osc. Coupling
C15	4		17.55						Osc. Coupling
C16	2		17.78		TCZ-2.2				RF Coupling *
C17	1500	500	17.101	1464-0015		1R5D15		MS-215	Fixed Padder
C18	2500	500	17.114	1467-0025	D6-252	1W5D25	GP2M-0025	1FM-225	Osc. Anode Dec.
C19	.047	400	12.80	P488-047	DF-503	PTE4S5		4TM-S47	Osc. Anode Dec.
C20	.0022	600	12.86	P688-0022	D6-222	PTE6D2	GP2M-0022	6TM-D22	IF Grid Filter
C21	4		17.55						Neutralizing
C22	100		17.21	SI100	D6-101	5W5T1	GP1K-100	19C11	Diode RF Filter
C23	.0022	600	12.86	P688-0022	D6-222	PTE6D2	GP2M-0022	6TM-D22	Audio Coupling
C24	.1	400	12.75	P488-1	DF-104	PTE4P1		4TM-P1	RF Bypass
C25	.05	200	12.80	P288-05	DF-503	PTE4S5		2TM-S5	AF Amp. Screen
C26	100		17.21	SI100	D6-101	5W5T1	GP1K-100	19C11	AF Amp. Plate
C27	.0022	600	12.86	P688-0022	D6-222	PTE6D2	GP2M-0022	6TM-D22	Tone Comp.
C28	.0022	600	12.86	P688-0022	D6-222	PTE6D2	GP2M-0022	6TM-D22	Audio Coupling
C29	.0022	400	12.86	P688-0022	D6-222	PTE6D2	GP2M-0022	6TM-D22	Output Plate
C30	.05	200	12.80	P288-05	DF-503	PTE4S5		2TM-S5	Filament Bypass
C31	.047	400	12.87	P488-047	DF-503	PTE4S5		4TM-S47	Line Filter

* Not used in all models.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	
R1A	1Meg	½	57.12	Q14-137	AG-61-S	B-68	Tone Control
B	Shaft		Not req.	Not req.	FS-3	Not req.	Attach to R1A per instructions
R2A	500KΩ	½	57.61	Q13-133	AG-60-Z	B-60-S	Volume Control
B	Shaft		Not req.	Not req.	FS-3	Not Req.	Attach to R2A per instructions
C	Switch		Not req.	76-2	SWB-2	Not Req.	Attach to R2A per instructions

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA FADA PART No.	IRC PART No.	IDENTIFICATION CODES
	RESISTANCE	WATTS			
R3	2.2Meg	½	32.34	BTS-2.2Meg	Bias Network
R4	2.2Meg	½	32.34	BTS-2.2Meg	RF Amp. Grid
R5	2.2Meg	½	32.34	BTS-2.2Meg	Conv. Grid
R6	100Ω	½	32.2	BTS-100	Parasitic Suppressor
R7	100KΩ	½	32.89	BTS-100K	Osc. Grid
R8	4700Ω	½	32.9	BTS-4700	Osc. Anode
R9	10KΩ	½	32.11	BTS-10K	Osc. Anode Decoupling
R10	6.8Meg	½	32.88	BTS-6.8Meg	IF Amp. Grid
R11	3.3Meg	½	32.25	BTS-3.3Meg	AVC Network
R12	6.8Meg	½	32.86	BTS-6.8Meg	AF Amp. Grid
R13	3.3Meg	½	32.25	BTS-3.3Meg	AF Amp. Screen
R14	470K	½	32.92	BTS-470K	AF Amp. Plate
R15	2.2Meg	½	32.34	BTS-2.2Meg	Output Grid
R16	470Ω	½	32.30	BTS-470	Filter
R17	1000Ω	½	33.8	BTS-1000	Filament String
R18	2700Ω	½	32.57	BTS-2700	Filament String
R19	1000Ω	½	32.8	BTS-1000	Filament String
R20	1800Ω	½	32.201	BTS-1800	Filament String
R21A	1850Ω	10	117.53		Filament String – Wire Wound
B	56Ω				Surge Limiter – Wire Wound
R22	680	½	32.31	BTS-680	Filament String
R23	1800Ω	1	32.401	BTA-1800	Filter
R24	33Ω	½			Parasitic Suppressor

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	IMPEDANCE SEC.	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA FADA PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
T1	9.8KΩ	3.3Ω	250Ω	.6Ω	4250	A-3879 ①	A-2932	RO-16 ①	① Drill one new mounting hole.

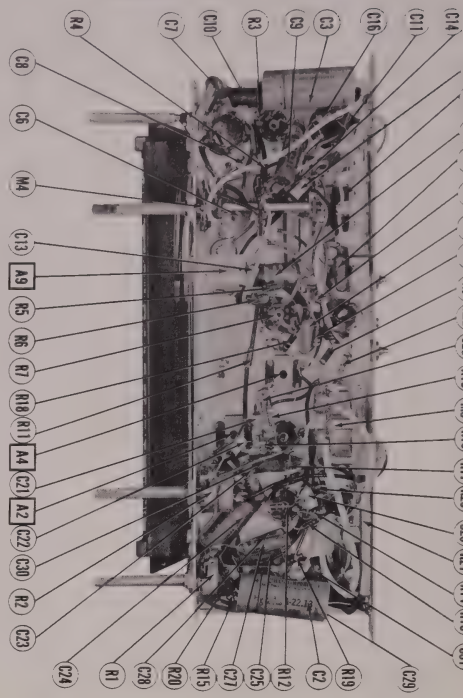
SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA FADA PART No.	JENSEN PART No.	QUAM PART No.	INSTALLATION NOTES
	FIELD	V. C. IMP.				
SP1	PM	3.3Ω	107.45	ST105 Model P5-K	5A1	
	CONE DIA.	V. C. DIA.				
SP2	4"	9/16"				

R F COILS

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA FADA PART No.	MEISSNER PART No.	
L1	Loop Ant.	2.4Ω		37.224		530-1650KC
L2A	Ant. Coil	.9Ω	.3Ω	37.228		2.3-7.6MC Includes L2B
B	Ant. Coil	.4Ω	.1Ω			7.4Ω 23.5MC Part of L2A
L3A	RF Coil	105Ω	10Ω	37.225		530-1650KC Includes L3B, L3C
B	RF Coil	13Ω	.4Ω			2.3-7.6MC Part of L3A
C	RF Coil	2.8Ω	.1Ω			7.4 23.5MC Part of L3A
L4A	Osc. Coil	1.6Ω	6.2Ω	37.221		530-1650KC Includes L4B
B	Osc. Coil	.2Ω	.3Ω			2.3-7.6MC Part of L4A
L5	Osc. Coil	.3Ω	.1Ω	37.220		7.4-23.5MC
L6	1st. IF	25Ω	25Ω	37.223		
L7	2nd. IF	25Ω	25Ω	37.223		

CHASSIS—BOTTOM VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SELENIUM RECTIFIER

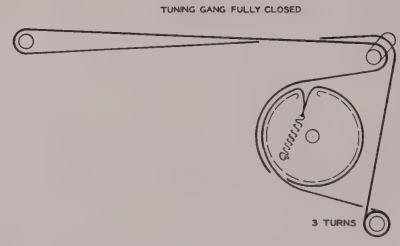
ITEM No.	RATING CURRENT	REPLACEMENT DATA FADA PART No.	SYLVANIA PART No.	SELETRON PART No.	NOTES
M1	.077A	112.18	NC-5	5M1	

BATTERIES

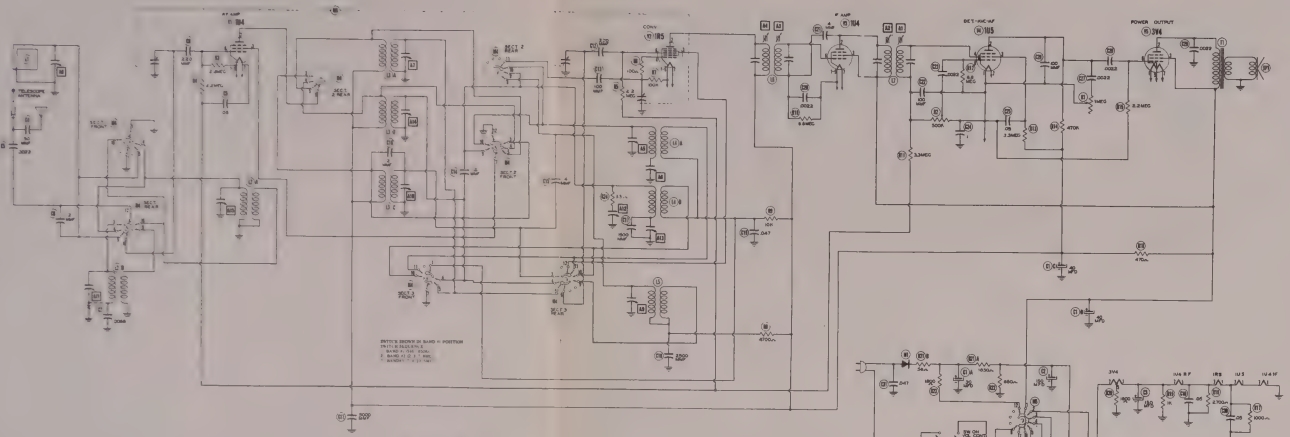
ITEM No.	VOLTAGE	FADA PART No.	REPLACEMENT DATA EVEREADY "A"	EVEREADY "B"	EVEREADY "A-B"	BURGESS "A"	BURGESS "B"	BURGESS "A-B"	INSTALLATION NOTES
M2	9V "A"		746			G3			2 Required
M3	90V "B"			482			M30		2 Required

MISCELLANEOUS

ITEM No.	PART NAME	FADA PART No.	NOTES
M4	Switch	47.32	Band
M5	Switch	47.35	Battery - Line
M6	3 Gang Var. Cap.	27.41	(19-469MMF) Each Section



DIAL CORD DRIVE



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V-1	6BA	6.7VDC	85VDC	85VDC	2V	2.1VDC	2VDC	0VDC
V-2	6BA	6.9VDC	85VDC	85VDC	6.5 VDC	6.5VDC	2VDC	1.1VDC
V-3	6BA	0V	89VDC	85VDC	85VDC	2V	0V	1.1VDC
V-4	6BA	6.7VDC	105VDC	85VDC	105DC	0V	0VDC	2.6VDC
V-5	6P6	0VDC	89VDC	85VDC	1.2VDC	0.6VDC	0VDC	0VDC

1 TAKEN WITH VACUUM TUBE VOLTMETER

V & R TAKEN IN AC-DC POSITION

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V-1	6BA	*	25,200	22,300	Inf	*	1.55Ka	*
V-2	6BA	*	25,500	1280Ω	690Ω	*	1.56Ka	*
V-3	6BA	*	25,500	21,850	21,850	*	0.68Ka	*
V-4	6BA	*	149KΩ	12.5Ka	680Ω	Inf.	0.68Ka	*
V-5	6P6	*	25,500	21,850	*	*	0.20Ka	*

* DO NOT USE OHMMETER TO MEASURE FILAMENT RESISTANCE
† MEASURED FROM OUTPUT OF AC

THE COOPERATION OF THE MANUFACTURER OF THIS
RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

1. **DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.**
2. **Socket connections are shown as bottom views.**
3. **Measured values are from socket pin to common negative.**
4. **Line voltage maintained at 117 volts for voltage readings.**
5. **Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.**
6. **Volume control at maximum, no signal applied for voltage measurements.**

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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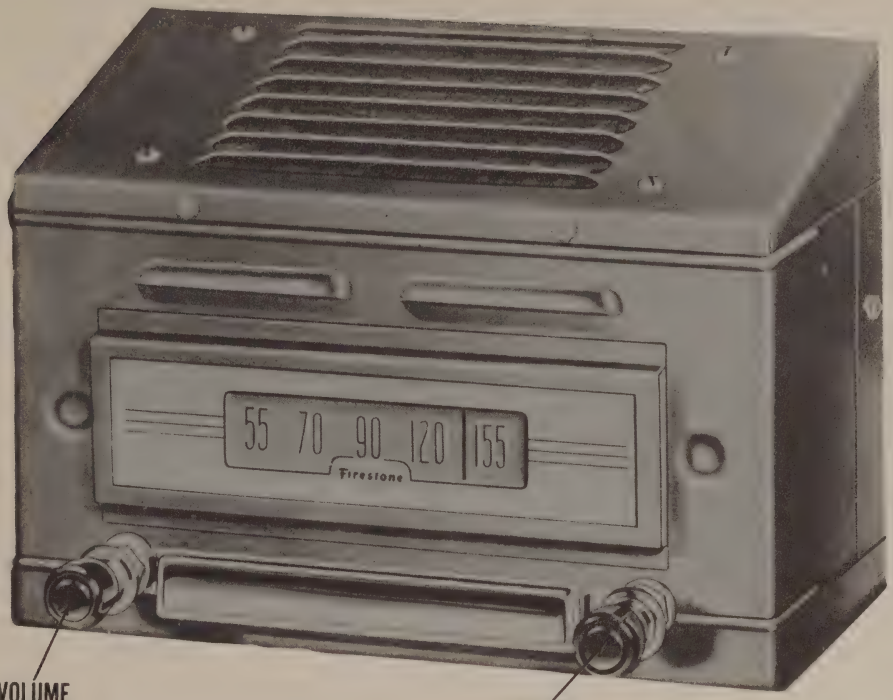
FIRESTONE
MODEL 4-B-58



FIRESTONE
MODEL 4-B-58

TRADE NAME	Firestone, Model 4-B-58
SUPPLIER	Firestone Tire & Rubber Co., Akron, Ohio
TYPE SET	Battery Operated Custom Built Automotive Superheterodyne Receiver
TUBES (SIX)	Types 6BA6 RF Amp., 6BE6 Converter, 6BA6 IF Amp., 6AT6 DET-AVC-AF, 6AQ5 Power Output, 6X4 Rectifier
POWER SUPPLY	6 Volt Storage Battery — RATING 5.4 Amp. at 6 Volts DC
TUNING RANGE—BROADCAST	538-1600KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn tuning gang fully closed and set right hand edge of pointer carriage 2 11/32" from right hand edge of dial backplate.
Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to pin 7 (Grid) of 6BE6 (V2) Low side to chassis	455KC (400∿ Mod)	Tuning gang fully open.	Across voice coil.	A1, A2, A3, A4	Adjust for maximum output.
2.	100MMF	High side to antenna lead. Low side to chassis.	1600KC	"	"	A5	"
3.	100MMF	"	1400KC	Tune for max. output.	"	A6, A7	"
4.	100MMF	"	600KC	"	"	A8, A9, A10	Adjust for maximum output. Repeat steps 3 and 4 until no furhter improvement can be made.

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PARTS LIST AND DESCRIPTIONS

FIRESTONE
MODEL 4-B-58

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		FIRESTONE PART No.	STANDARD REPLACEMENT		
V1	RF Amp.	6BA6	6BA6	7BK	
V2	Converter	6BE6	6BE6	7CH	
V3	IF Amp.	6BA6	6BA6	7BK	
V4	DET.-AVC-AF	6AT6	6AT6	7BT	
V5	Power Output	6AQ5	6AQ5	7BZ	
V6	Rectifier	6X4	6X4	5BS	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	FIRESTONE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	
C1A	20	350	CE-86			UP2235C		TVL-3634	■ Filter
B	20	350						TVA-1504	▲ Filter
C	20	25							Output Cathode
C2	.05	200	C207	P288-05	DF-503	PTE4S5		2TM-S5	AVC Filter
C3	.05	200	C207	P288-05	DF-503	PTE4S5		2TM-S5	Decoupling
C4	.05	200	C207	P288-05	DF-503	PTE4S5		2TM-S5	AVC Filter
C5	100		CC200	SI100	D6-101	5W5T1	GP1K-101	19C11	Osc. Grid Cap.
C6	200		CC201	SI200	D6-201	5W5T2	GP2K-201	19C30	Diode RF Filter
C7	.002	200	C203	P688-002	D6-202	PTE6D2	GP2-333-202	6TM-D2	Audio Coupling
C8	200		CC201	SI200	D6-201	5W5T2	GP2K-201	19C30	AF Amp. Grid
C9	200		CC201	SI200	D6-201	5W5T2	GP2K-201	19C30	AF Amp. Plate
C10	.01	600	C206	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Audio Coupling
C11	.01	600	C206	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Output Plate
C12	.008	1600	C205	P1688-0075		PTE16D8		MB-D8	Buffer
C13	.5	100	C209	P185-5		GT2P5		68P20	Hash Filter
C14	.5	100	C209	P185-5		GT2P5		68P20	Hash Filter

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	FIRESTONE PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	
R1	750KΩ	½	RV-200				Volume control and switch

RESISTORS

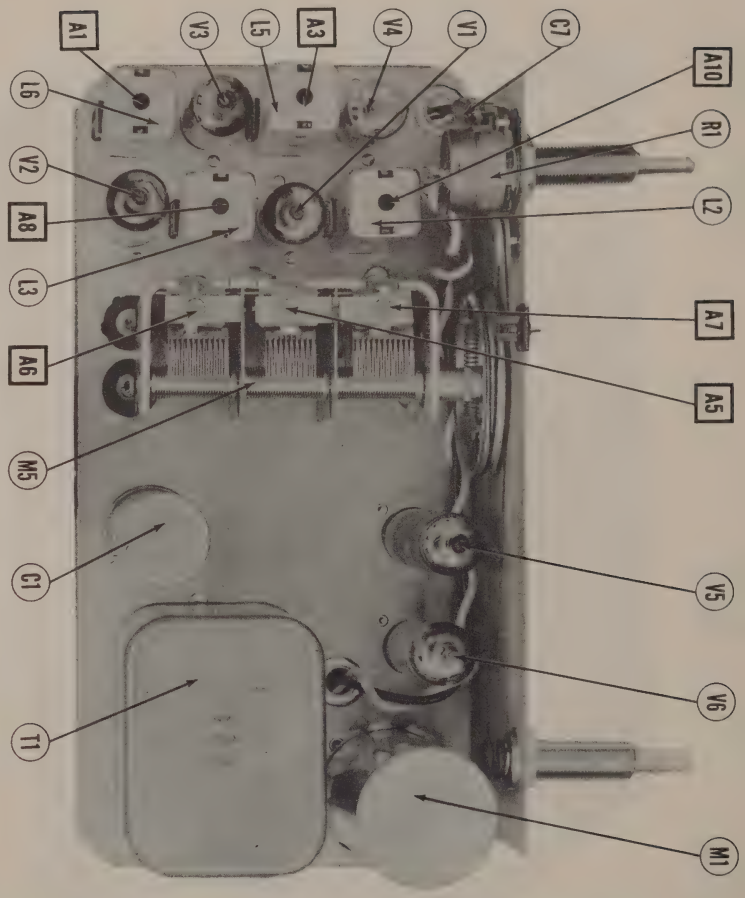
ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	FIRESTONE PART No.	IRC PART No.	
R2	1Meg	½	R309	BTS-1Meg	AVC Network
R3	20KΩ	½	R306	BTS-22K	Osc. Grid
R4	1500Ω	½	R314	BTS-1500	IF Cathode
R5	2Meg	½	R310	BTS-2.2Meg	AVC Network
R6	10Meg	½	R311	BTS-10Meg	AF Grid
R7	240KΩ	½	R307	BTS-220K	AF Plate
R8	510KΩ	½	R308	BTS-470K	Output Grid
R9	330Ω	½	R303	BW-½-330	Output Cathode
R10	20KΩ	2	R313	BT-2-22K	Screen Dropping
R11	1000Ω	1	R312	BTA-1000	Filter
R12	100Ω	½	R301	BW-½-100	Hash Suppression
R13	100Ω	½	R301	BW-½-100	Hash Suppression

TRANSFORMER (VIBRATOR)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	FIRESTONE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	6VDC @ 3A	480VCT .052ADC			TV-86		P-4071 ①	VT-1

① Drill new mounting holes.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		FIRESTONE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T2	5300Ω	3.9Ω	260Ω	.5Ω	Part of SP1	A-3328 ②	A-3026 ②		② Bend mounting tabs down.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			FIRESTONE PART No.	JENSEN PART No.	QUAM PART No.	
	FIELD	V. C. IMP.		ST105		
SP1	PM	3.9Ω	PM-250	Model P5-X ①	5A1 ①	① Remount output transformer
	CONE DIA.	V. C. DIA.				
SP2	4 7/8"	9/16"				

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	FIRESTONE PART No.	MEISSNER PART No.	
L1	Ant. Loading	1.8Ω		L200		
L2	Ant. Coil	13.9Ω	3.9Ω	57FB-3		
L3	RF Coil	100Ω	7.5Ω	57FB-4		
L4	Osc. Coil	4.6Ω		L201	14-1073	Tap ④ .6Ω
L5	1st IF	21Ω	21Ω	1655-16	16-6758	
L6	2nd IF	21Ω	21Ω	1655-16	16-6758	
L7	Hash Choke	0Ω		L203		
L8	Hash Choke	.1Ω		L202		

VIBRATOR

ITEM No.	TYPE	INPUT VOLTS	FREQUENCY	REPLACEMENT DATA				INSTALLATION NOTES
				FIRESTONE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	RADIART PART No.	
M1	INT	6VDC	115v	V-83	A-100	5300	5300	

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					FIRESTONE PART No.		
M2	Bayonet	6-8	.20	White	T51		Type #51

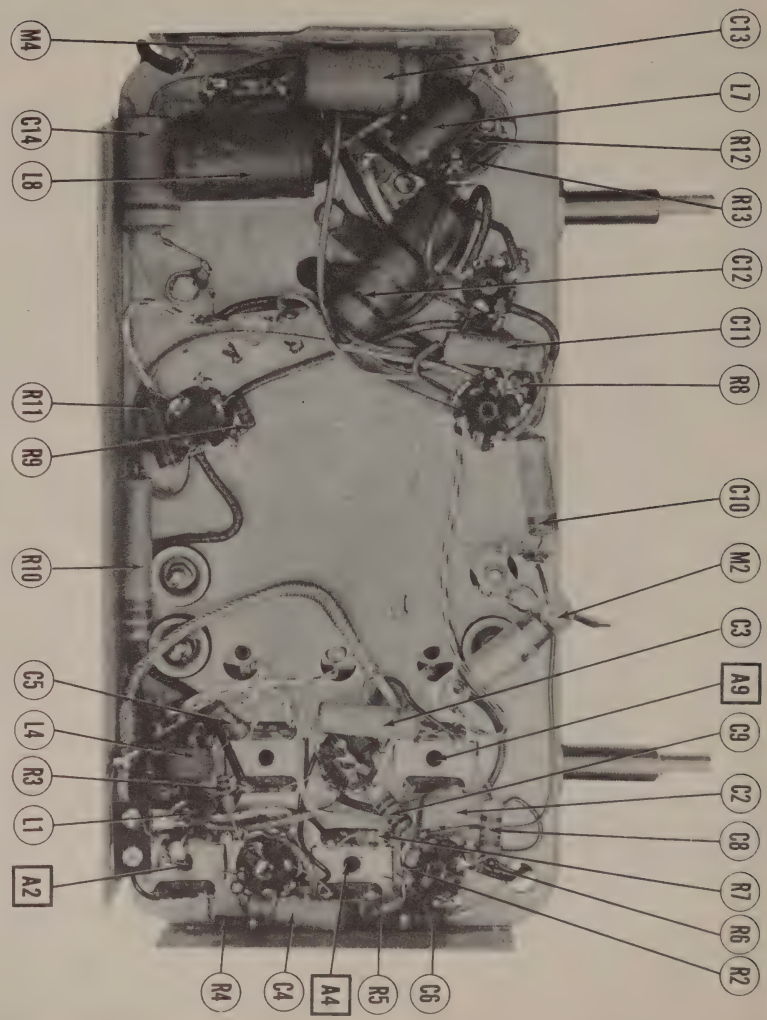
FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA				REMARKS
			FIRESTONE PART No.		LITTELFUSE PART No.		
			FUSE	HOLDER	FUSE	HOLDER	
M3	3AG	15Amp.	A201		311015	155020A	

MISCELLANEOUS

ITEM No.	PART NAME	FIRESTONE PART No.	NOTES
M4	Spark Plate		
M5	3 Gang Var. Cap.	CV-200	(24-387MMF, 20-317MMF, 37-227MMF)

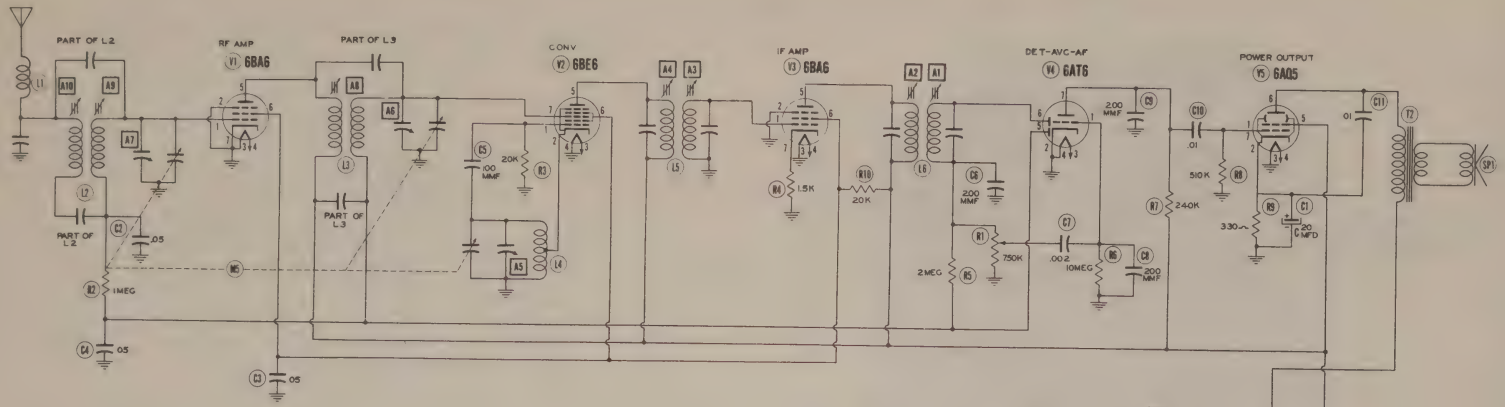
CHASSIS—BOTTOM VIEW

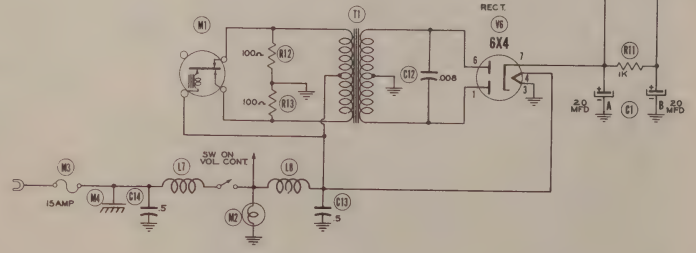


SET 135 FOLDER B

FIRESTONE MODEL 4-B-58

FIRESTONE MODEL 4-B-58





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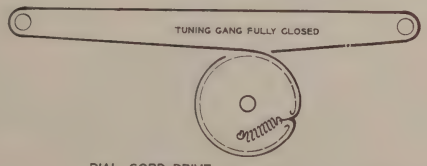

DIAL CORD DRIVE

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	6BA6	-.4VDC	0V	0V	6VDC	205VDC	55VDC	0V
V 2	6BE6	5-6.4VDC	0V	6VDC	0V	205VDC	55VDC	-.3VDC
V 3	6BA6	0V	0V	0V	6VDC	205VDC	55VDC	3.5VDC
V 4	6AT6	-.5VDC	0V	6VDC	0V	-.3VDC	-.3VDC	65VDC
V 5	6AQ5	.2VDC	11VDC	0V	6VDC	230VDC	205VDC	.2VDC
V 6	6X4	260VAC	0V	0V	6VDC	0V	280VAC	225VDC

‡ TAKEN WITH VACUUM TUBE VOLTMETER

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	6BA6	3.7Meg	0Ω	0Ω	.4Ω	†1000Ω	†20KΩ	0Ω
V 2	6BE6	20KΩ	.8Ω	.4Ω	0Ω	†1000Ω	†20KΩ	2.7Meg
V 3	6BA6	21Ω	0Ω	0Ω	.4Ω	†1000Ω	†20KΩ	1500Ω
V 4	6AT6	10Meg	0Ω	.4Ω	0Ω	2.7Meg	750KΩ	†240KΩ
V 5	6AQ5	510KΩ	330Ω	0Ω	.4Ω	†280Ω	†1000Ω	510KΩ
V 6	6X4	350Ω	Inf.	0Ω	.4Ω	Inf.	350Ω	55KΩ

† MEASURED FROM PIN 7 OF V6

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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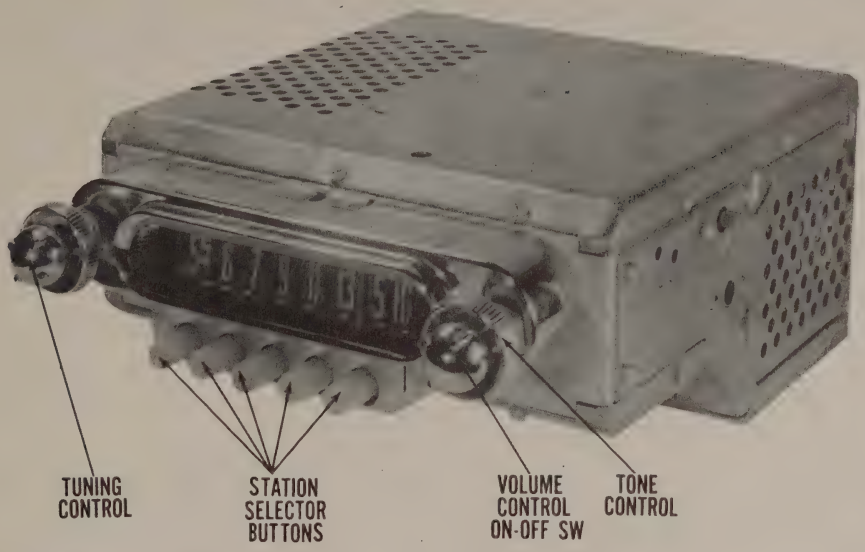
135-8

1 - DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2.- Socket connections are shown as bottom views.
3 - Measured values are from socket pin to common negative.
4 - Battery voltage maintained at 6.3 volts for voltage readings.
5 - Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
6 - Volume control at maximum, no signal applied for voltage measurements.

FORD
MODEL OMF (OA-18805-A2)



TRADE NAME	Ford, Model OMF (OA-18805-A2)
SUPPLIER	Ford Motor Car Co., Detroit, Michigan
TYPE SET	Battery Operated Custom-Built, Automotive Superheterodyne Receiver
TUBES (SIX)	Types 6SK7GT RF Amp., 6SA7GT Converter, 6SK7GT IF Amp., 6SQ7GT DET.-AVC-AF, 6V6GT Power Output, 6X5GT Rectifier
POWER SUPPLY	6 Volt Storage Battery — RATING 5 Amp. @ 6.3 Volts DC
TUNING RANGE—BROADCAST	540-1610KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to pin 8 (Grid) of 6SA7GT, (V2). Low side to chassis.	265KC (400~Mod)	High freq. end of tuning range. (Cores fully out)	Across voice coil.	A1, A2, A3, A4	Adjust for maximum output.
	Check to see that tuning cores extend 1 3/8 ins. outof the coil forms.						
2.	Fig. 1	High side thru dummy to antenna receptacle. Low side to chassis.	1610KC	Tuning cores fully out.	Across voice coil.	A5, A6, A7	Adjust for maximum output.
3.	"	"	1400KC	Turn tuning knob until tuning core carriage moves 5/16 in. inward.	"	A8, A9, A10	Adjust for maximum output. Repeat steps 2 & 3 until no further increase can be made.
4.	"	"	600KC (4 microvolts output.)	Tune for max. output.	"	R2	Adjust "sensitivity control" for 1 watt output. (1.79 volts on output meter).
	After receiver is installed, fully extend the antenna and tune in a weak station near 1400KC. Readjust A7 for maximum output.						

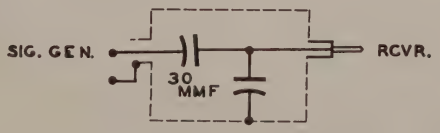


FIG. 1

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		MOTOROLA PART No.	STANDARD REPLACEMENT		
V1	RF Amplifier	6SK7GT	6SK7GT	8N	
V2	Converter	6SA7GT	6SA7GT	8AD	
V3	IF Amplifier	6SK7GT	6SK7GT	8N	
V4	Det.-AVC-AF	6SQ7GT	6SQ7GT	8Q	
V5	Power Output	6V6GT	6V6GT	7AC	
V6	Rectifier	6X5GT	6X5GT	6S	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	MOTOROLA PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	
C1A	10	350	23A485677	AFH32H4A		UP15S -		TVL-3630	▲ Filter
B	15	350				135C			■ Filter
C	20	25							Output Cathode
C2	.006	100	8A4529	P688-006	D6-562	PTE6D6	811-005	6TM-D6	RF Coupling
C3	120	500	21R6715	1469-0001	TCZ-120	5R5T1	NP0M-120	MS-31	Fixed Trimmer
C4	.1	100	8R472035	P288-1	DF-104	PTE4P1		2TM-P1	AVC Filter
C5	.05	400	8R14791	P488-05	DF-503	PTE4S5		4TM-S5	Decoupling
C6	30	500	21R6665	SI30	D6-300	5W5Q3	GP1K-30	MS-43	RF Coupling
C7	250	500	21R6662	1469-00025	D6-251	5R5T25	GP2K-250	MS-325	Fixed Trimmer
C8	100	500	21R6631	1468-0001	D6-101	5W5T1	GP1K-100	1FM-31	Fixed Trimmer
C9	47		21R6513	SI47	D6-470	5W5Q5	GP1K-47	19C25	Osc. Grid Cap.
C10	180		21R18409				N220L-180		Fixed Trimmer
C11	.05	400	8R14791	P488-05	DF-503	PTE4S5		4TM-S5	IF Screen
C12	50	500	21R6513	1468-00005	D6-500	5W5Q5	GP1K-50	1FM-45	IF Coupling
C13	.01	100	8R472754	P488-01	D6-103	PTE4S1	821-01	4TM-S1	Audio Coupling
C14	.01	400	8R23690	P488-01	D6-103	PTE4S1	821-01	4TM-S1	Audio Coupling
C15	.003	400	8R490437	P688-003	D6-302	BTE6D3	GP2M-003	6TM-D3	Tone Comp.
C16	.02	100	8R51209	P488-02	DF-203	PTE4S2		4TM-S2	Tone Comp.
C17	250	500	21R6543	1468-00025	D6-251	5W5T25	GP2K-250	1FM-325	Output Grid
C18	.004	400	8K71909	P688-004	D6-402	PTE6D4	GP2M-004	6TM-D4	Output Plate
C19	.008	1600	8R472215	P1688-008		PTE16D8		MB-D8	Buffer
C20	.5	100	8K17028	P185-5				68P20	Hash Filter
C21	.5	100	8K17028	P185-5				68P20	Hash Filter

CONTROLS

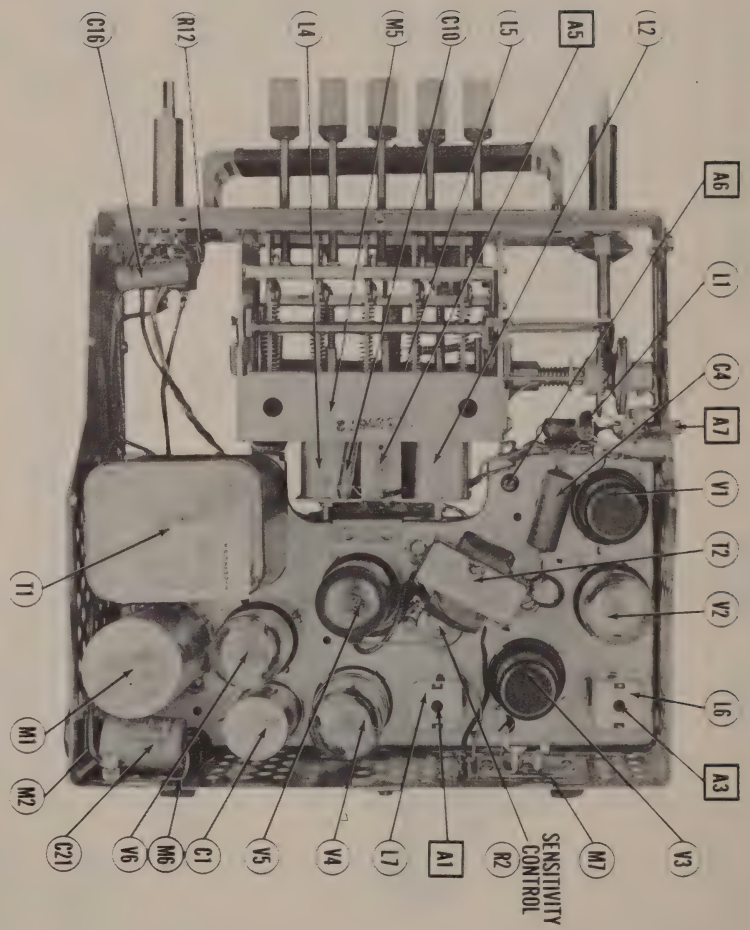
ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	MOTOROLA PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	
R1A	1 Meg	½	18B591266	Concentrikit B11-137 ♯			Tone Control - Front
B	250KΩ	½		B13-130X ♯			Volume Control - Tapped Ⓐ 100KΩ - Rear
C	Shaft end			E-187 ♯			Attach per instructions in "Concentrikit"
D	Switch			76-1 ♯			Attach per instructions in "Concentrikit"
E	Bushing			S-5 ♯			Attach to R1
R2	125Ω	1					Sensitivity Control - Wire Wound

♯ Additional parts to be used with "Concentrikit".

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	MOTOROLA PART No.	IRC PART No.	
R3	470KΩ	½	6R6032	BTS-470K	RF Amp. Grid
R4	6800Ω	1	6R6287	BTA-6800	RF Amp. Plate
R5	220KΩ	½	6R6015	BTS-220K	Conv. Grid
R6	47KΩ	½	6R6056	BTS-47K	Osc. Grid
R7	6800Ω	1	6R490492	BTA-6800	Decoupling
R8	47KΩ	½	6R6056	BTS-47K	IF Amp. Screen

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	MOTOROLA PART No.	IRC PART No.	
R9	470KΩ	½	GR6032	BTS-470K	AVC Network
R10	2.2Meg	½	GR3927	BTS-2.2Meg	AVC Network
R11	47KΩ	½	GR6056	BTS-47K	Diode Filter
R12	12KΩ	½	GR6394	BTS-12K	Tone Compensation
R13	4.7Meg	½	GR2122	BTS-4.7Meg	AF Amp. Grid
R14	470KΩ	½	GR6032	BTS-470K	AF Amp. Plate
R15	220KΩ	½	GR6015	BTS-220K	Output Grid
R16	270Ω	2	GR6336	BW-2-270	Output Cathode
R17	2200Ω	1	GR6006	BTA-220	Filter
R18	56Ω	½	GR5614		Hash Suppressor
R19	56Ω	½	GR5614		Hash Suppressor
R20	.47Ω	1	17K488266	BW-1-.47	Rectifier Filament
R21	.27Ω	1	17K488267		Filament Dropping - Wire Wound

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	MOTOROLA PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	6.3V	460VCT			25C591264			VT-1 ①
	ⓐ 2.8A	.048ADC						

① Drill new mounting holes.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		MOTOROLA PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T2	5.5KΩ	3Ω	630Ω	.7Ω	25B591263	A-3877 ②	A-2930	H0-9 ②	② Drill one new mounting hole.

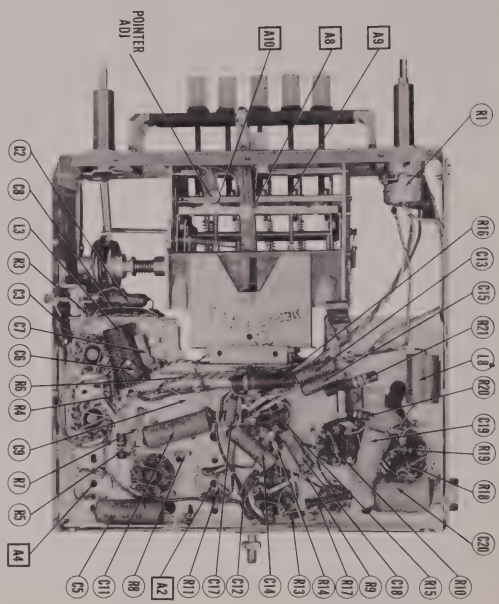
SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
	FIELD	V. C. IMP.	MOTOROLA PART No.	VIKING PART No.	QUAM PART No.	
SP1	PM	3Ω	50C592567	6979	69A2	
	CONE DIA.	V. C. DIA.				
SP2	6"X9"	9/16"				

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA			NOTES
		PRI.	SEC.	MOTOROLA PART No.	MEISSNER PART No.	IRC PART No.	
L1	Ant. Loading Coil	2.2Ω				CLA	2.7Microhenries
L2A	Ant. Coil	13Ω		51X591745			Used in Tuner Part # 51E591672
B	Ant. Coil			51X591785			Used in Tuner Part # 51E591673
L3	IF Trap	Inf.		24A591317			
L4A	RF Coil	13Ω	13Ω	51X591746			Used in Tuner Part # 51E591672
B	RF Coil			51X591787			Used in Tuner Part # 51E591673
L5A	Osc. Coil	.2Ω	5.5Ω	51X591744			Used in Tuner Part # 51E591672
B	Osc. Coil			51X591786			Used in Tuner Part # 51E591673
L6	Ist. IF	40Ω	40Ω	24B590193			
L7	2nd. IF	40Ω	40Ω	24K591287			
L8	Hash Choke	0Ω		24A472535			

CHASSIS—BOTTOM VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

VIBRATOR

ITEM No.	TYPE	INPUT VOLTS	FREQUENCY	REPLACEMENT DATA				INSTALLATION NOTES
				MOTOROLA PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	RADIART PART No.	
M1	INT	6.3	115v	48B3333	A-200	5342	5342	

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA				REMARKS
			MOTOROLA PART No.		LITTELFUSE PART No.		
			FUSE	HOLDER	FUSE	HOLDER	
M2	SFE	9Amp.	65K16248	9K501325	307009	155009A	

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					MOTOROLA PART No.		
M3	Bayonet	6-8	.25	Blue	65X10867		Type #44
M4	Bayonet	6-8	.25	Blue	65X10867		Type #44

MISCELLANEOUS

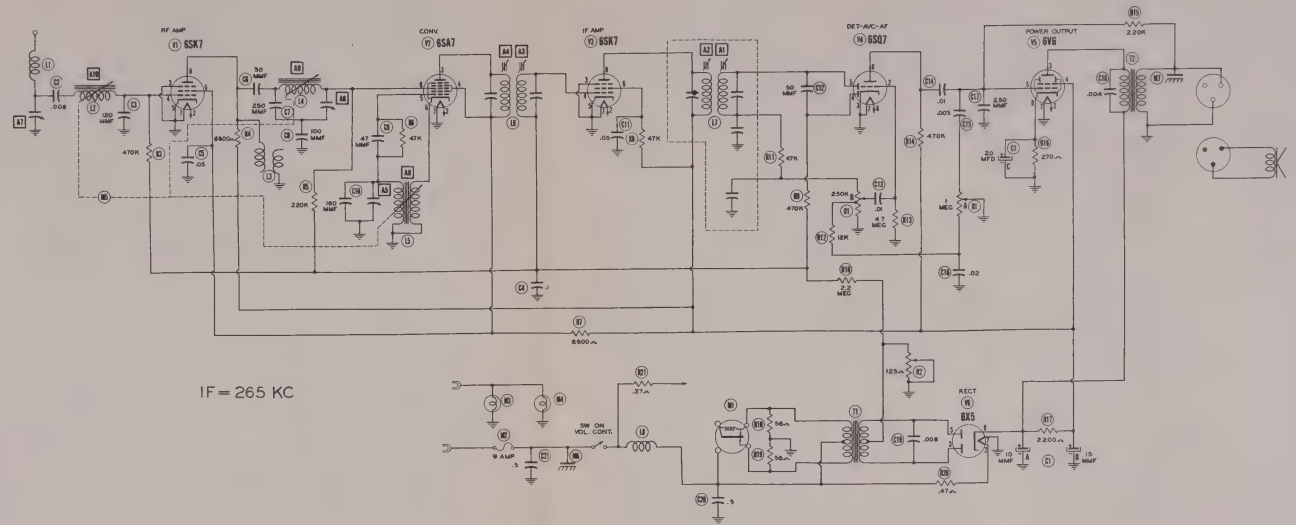
ITEM No.	PART NAME	MOTOROLA PART No.	NOTES
M5A	Tuner	51E591672	
B	Tuner	5B591673	Alternate
M6	Spark Plate	1A591221	
M7	Spark Plate	1A591220	
A7	Trimmer	30B591269	Ant. Adj.

PUSH BUTTON ADJUSTMENT

SINCE THE PUSHBUTTONS ARE MECHANICAL, ANY BUTTON MAY BE ADJUSTED TO ANY STATION WITHIN THE RECEIVERS TUNING RANGE. LOOSEN THE BUTTON BY TURNING, (WITH YOUR FINGERS), ONE TURN COUNTER-CLOCKWISE.

CAREFULLY TUNE IN THE DESIRED STATION MANUALLY. PRESS THE BUTTON ALL THE WAY IN AND RELEASE IT. TIGHTEN THE BUTTON BY TURNING, (WITH YOUR FINGERS), CLOCKWISE.

REPEAT THIS PROCEDURE FOR EACH BUTTON.



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6SK7GT	0V	5.8VDC	0V	-.5VDC	0V	95VDC	0V	95VDC
V 2	6SA7GT	0V	5.8VDC	95VDC	85VDC	1.3VDC	0V	0V	-.5VDC -.5VDC
V 3	6SK7GT	0V	5.8VDC	0V	-.5VDC -.5VDC	0V	85VDC	0V	100VDC
V 4	6SQ7GT	0V	-.8VDC	0V	-.8VDC	-.8VDC	85VDC	0V	5.8VDC
V 5	6V6GT	0V	5.8VDC	310VDC	250VDC	0V	-.8VDC -.1VDC	0V	7.5VDC
V 6	6X5GT	-8VDC 0V	5.8VDC	331VAC	0V	331VAC	-.1VDC	0V	390VDC

1. TAKEN WITH VACUUM TUBE VOLTMETER

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6SK7GT	0Ω	.5Ω	0Ω	2.7Meg	0Ω	190Ω	0Ω	190Ω
V 2	6SA7GT	.5Ω	.5Ω	190Ω	190Ω	47KΩ	22Ω	0Ω	2.4Meg
V 3	6SK7GT	.5Ω	.5Ω	0Ω	2.3Meg	0Ω	190Ω	0Ω	12.2KΩ
V 4	6SQ7GT	0Ω	6.7Meg	0Ω	2.7Meg	220KΩ	470KΩ	0Ω	.5Ω
V 5	6V6GT	.6Ω	.9Ω	720Ω 775Ω	72.5KΩ	220KΩ 250Ω	6.7Meg	.6Ω	325Ω
V 6	5X5GT	125Ω 0Ω	.9Ω	775Ω 720Ω	0Ω	250Ω 220KΩ	2.2Meg	0Ω	220KΩ

T MEASURED FROM PIN 8 OF V6

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

1 - DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2 - Socket connections are shown as bottom views.
3 - Measured values are from socket pin to common negative.
4 - Battery voltage maintained at 6.3 volts for voltage readings.
5 - Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6 - Volume control at maximum, no signal applied for voltage measurements.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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PHOTOFACT* Folder

PHILCO MODELS 51-T1833, 51-T1835, 51-T1838, 51-T1870, 51-T1871, 51-T1872, 51-T1874, L, 51-T1875, 51-T1876

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MODEL 51-T1874

PHILCO MODELS 51-T1833, 51-T1835, 51-T1838, 51-T1870, 51-T1871, 51-T1872, 51-T1874, L, 51-T1875, 51-T1876

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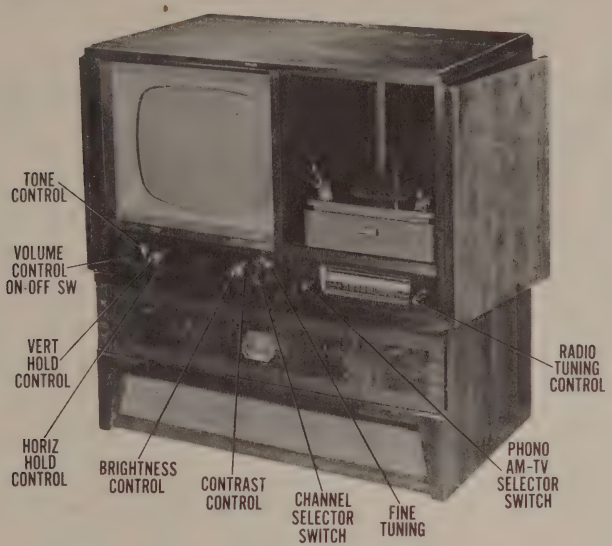
PHILCO MODELS 51-T1833, 51-T1835, 51-T1838, 51-T1870, 51-T1871, 51-T1872, 51-T1874, L, 51-T1875, 51-T1876



PHILCO MODEL 51-T1874

TRADE NAME	Philco, Models 51-T1833, 51-T1835 (Code 121), 51-T1838 Code 124), 51-T1870 (Code 121), 51-T1871, 51-T1872 Codes 121 and 122), 51-T1874, L, 51-T1875, 51-T1876 (Code 121)
MANUFACTURER	Philco Corp., Tioga and "C" Sts., Philadelphia, Pa.
TYPE SET	TV-AM -Phono Combination Receiver (Some Models TV "Only")
TUBES	Twenty Three (TV "Only" Models) Twenty Six (Combination Models)
POWER SUPPLY	110-120 Volts AC-60 Cycle RATING (TV) 2.0 Amp. @ 117 Volts AC
TUNING RANGE	(TV) Channel 2 thru 13 (AM) 540-1620KC

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ALL COMBINATION RECEIVERS USE PHILCO RECORD CHANGER UNIT M-22 EXCEPT MODEL 51-T1876 WHICH USES RECORD CHANGER UNIT M-20.
FOR SERVICE INFORMATION ON REMOTE CONTROL MECHANISM EMPLOYED IN SOME MODELS REFER TO PHOTOFACT FOLDER #10 SET #132.

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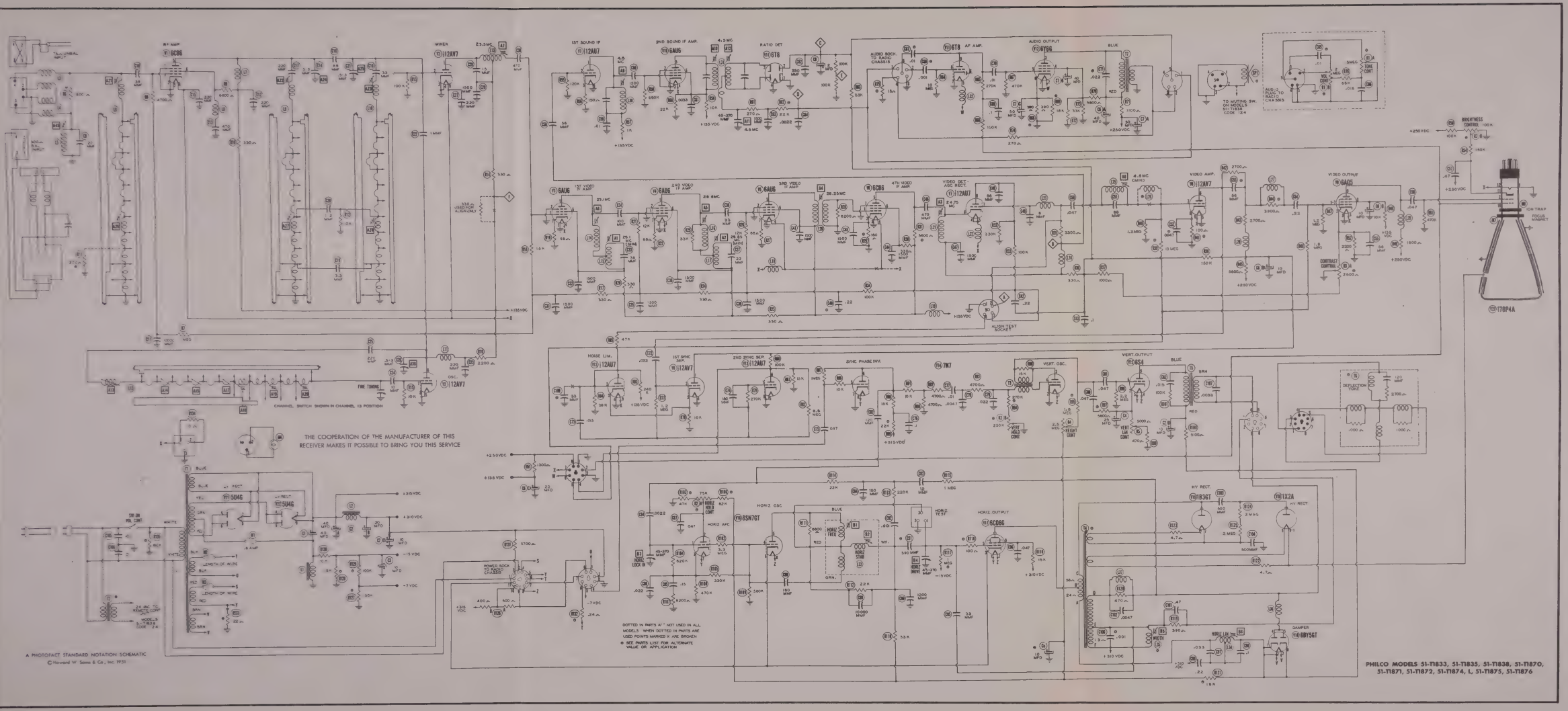
THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE
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DOTTED IN PARTS A" NOT USED IN ALL MODELS. WHEN DOTTED IN PARTS ARE USED POINTS MARKED X ARE BROKEN
⊕ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION
PHILCO MODELS 51-T1833, 51-T1835, 51-T1838, 51-T1870, 51-T1871, 51-T1872, 51-T1874, L, 51-T1875, 51-T1876

PHILCO MODELS 51-T1833, 51-T1835, 51-T1838, 51-T1870, 51-T1871, 51-T1872, 51-T1874, L, 51-T1875, 51-T1876

TV ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The end of the high voltage lead should be securely taped and kept away from the chassis. Do not remove the horizontal oscillator tube to disable the high voltage.

Turn the function selector to TV, (maximum clockwise).

VIDEO IF ALIGNMENT

Pre-set the adjustments as follows:
A1 and A2 fully counter-clockwise
A5 and A6 to the center of their range.
Connect the negative lead of a 3 volt battery to Pin 2 of the test socket. Connect the positive lead to chassis.
Remove the converter tube, (V2) and replace it with a 12AV7 which has Pin 8 removed, this will disable the local oscillator and prevent the possibility of erroneous indications.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to an ungrounded tube shield floating over dummy converter tube, (V2). Low side to chassis.	28.1MC	Any	DC probe to Point (A) Common to Point (B)	A1	Disconnect bias battery and short Pin 2 of the test socket to chassis. Adjust for MINIMUM deflection.
2.	"	"	21.85MC	"	"	A2	"
3.	"	"	24.75MC	"	"	A3	Reconnect bias battery and adjust for maximum deflection.
4.	"	"	26.25MC	"	"	A4	"
5.	"	"	26.6MC	"	"	A5	"
6.	"	"	23.1MC	"	"	A6	"
7.	"	"	23.5MC	"	"	A7	"

OVERALL VIDEO IF RESPONSE CHECK

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
8.	Direct	High side to an ungrounded tube shield floating over dummy converter tube, (V2). Low side to chassis.	24MC (10MC SWP)	22.1MC 26.6MC	Any	Vert. amp. to Point (A) Low side to chassis.		Check for response curve similar to figure 1. If necessary retouch A3 thru A7 for proper response. If any adjustment requires considerable change repeat VTVM alignment.

4.5MC TRAP ADJUSTMENT

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
9.	2200Ω carbon resistor	High side thru 2200Ω to Point B. Low side to chassis.	Not used	4.5MC (400% Mod.)	Any	Vert. amp. thru detector probe (fig. 4) to Pin 2 of picture tube socket.	A8	Adjust for MINIMUM 400% indication on scope.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

Connect two matched 100KΩ (± 1%) resistors in series from Point C to chassis. The junction of these two resistors is alignment Point E as shown on the schematic.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
10.	.01MFD	High side to Pin 2 (grid) of 12AU7 (V7). Low side to chassis.	4.5MC (Unmod.)	Any	DC probe to Point (C) Common to chassis.	A9, A10, A11	Adjust for maximum deflection.
11.	"	"	"	"	DC probe to Point (D). Common to Point (E)	A12	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60% modulation and 450KC sweep. Use 120% sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
10.	.01MFD	High side to Pin 2 (grid) of 12AU7, (V7). Low side to chassis.	4.5MC (450KC SWP)	4.5MC	Any	Vert. amp. to Point (C) Low side to chassis.	A9, A10	Disconnect stabilizer capacitor C8. Adjust for maximum amplitude and symmetry as per figure 2.
11.	"	"	"	"	"	Vert. amp. to Point (D). Low side to chassis.	A11, A12	Reconnect capacitor C8. Adjust A-11 and A12 until 4.5MC occurs at center of crossover lines as per figure 3 with maximum amplitude and straightness of crossover lines.

OSCILLATOR ALIGNMENT (TUNERS 76-5747, 76-6440-1 AND 76-6481-1)

Remove the dummy converter tube and replace the original 12AV7 in its socket.
Set the fine tuning control so the edge of the cam is centered on the channel 6 oscillator adjustment screw.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
12.	Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	213MC (10MC SWP)	211.25MC 215.75MC	13	Vert. amp. to Point (A). Low side to chassis.	A13	Adjust to place sound marker as shown in figure 5. The video marker should be at 50%.
13.	"	"	201MC (10MC SWP)	199.25MC 203.75MC	11	"	A14	"
14.	"	"	189MC (10MC SWP)	187.25MC 191.75MC	9	"	A15	"
15.	"	"	183MC (10MC SWP)	181.25MC 185.75MC	8	"	A16	Check the oscillator frequency on channel 8. If the frequency is high turn A16 several turns clockwise. If low, turn A16 several turns counter-clockwise. Repeat steps 12, 13, 14, and 15 until the oscillator is within 500KC of the correct frequency on channels 13, 11, 9, and 8.
16.	"	"	177MC (10MC SWP)	175.25MC 179.75MC	7	"	A17	Adjust to place sound marker as shown in figure 5. The video marker should be at 50%.
17.	"	"	85MC (10MC SWP)	83.25MC 87.75MC	6	"	A18	"
18.	"	"	69MC (10MC SWP)	67.25MC 71.75MC	4	"	A19	"
19.	"	"	57MC (10MC SWP)	55.25MC 59.75MC	2	"	A20	"

FIG. 1

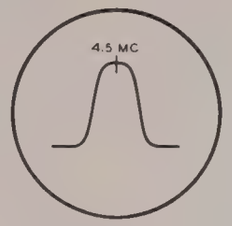


FIG. 2

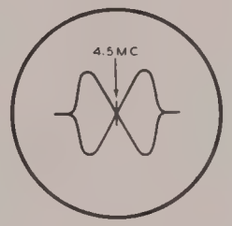


FIG. 3

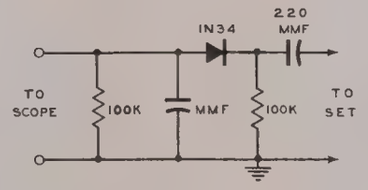


FIG. 4

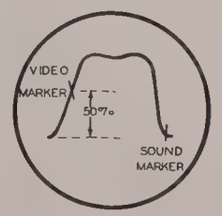


FIG. 5

TV ALIGNMENT INSTRUCTIONS (CONT.)

RF ALIGNMENT

Unsolder the red lead from the tuner and connect a 3300Ω resistor in series with it. The tuner end of the resistor is alignment Point F as shown on the schematic.
Unsolder the white lead from the tuner and connect it to the negative terminal of a 1 1/2 volt battery, connect the positive lead to chassis.
Connect a 330Ω carbon resistor between Pin 1 of (V3) and chassis.

TUNER NO. 76-5747

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
20.	Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	213MC (10MC SWP)	211.25MC 215.75MC	13	Vert. amp. to Point (F) Low side to chassis.	A21, A22, A23	Adjust A21 for maximum amplitude and symmetry as per figure 6. Adjust A22 and A23 for a symmetrical response centered about 213MC.
21.	"	"	177MC (10MC SWP)	175.25MC 179.75MC	7	"	A24, A25	Examine the response curve with respect to "tilt" and center frequency. Adjust A24, and A25 until the response is a mirror image of the original, this is necessary to compensate for the channel 13 adjustments. See figures 7A and 7B for compensation example. Repeat steps 20 and 21 until response on channels 7 and 13 are correct.
22.	"	"	85MC (10MC SWP)	83.25MC 87.75MC	6	"	A26, A27, A28	Adjust A26 for maximum response curve height and adjust A27 and A28 for symmetrical response centered about 85MC.

TUNER NO. 76-6440-1 AND 76-6481-1

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
23.	Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	213MC (10MC SWP)	211.25MC 215.75MC	13	Vert. amp. to Point (F) Low side to chassis.	A29, A30, A31	Adjust A29 and A30 for a symmetrical response centered at approximately 213MC. Set marker generator at 213MC, detune A29 counter-clockwise until a single peak appears then adjust A30 until peak is centerd at 213MC. Adjust A31 for maximum amplitude and symmetry of single peak. Readjust A29 and A30 for symmetrical response centered about 213MC.
24.	"	"	177MC (10MC SWP)	175.25MC 179.75MC	7	"	A32, A33	Examine the response curve with respect to "tilt" and center frequency. Adjust A32 and A33 until the response is a mirror image of the original, this is necessary to compensate for the channel 13 adjustments. See figures 7A and 7B for compensation example. Repeat adjustments of A29 and A30 and step 23 until proper response is obtained on both channels 7 and 13.
25.	"	"	85MC (10MC SWP)	83.25MC 87.75MC	6	"	A34, A35, A36	Adjust A34 and A35 for a symmetrical response centered at approximately 85MC, Set marker generator at 85MC and detune A34 counter-clockwise until a single peak appears then adjust A35 until the peak is centered at 85MC. Adjust A36 for maximum amplitude of single peak. Readjust A34 and A35 for symmetrical response centered about 85MC.
26.	"	"	69MC (10MC SWP)	67.25MC 71.75MC	4	"	A37	Adjust for maximum amplitude and symmetry of response curve.

RADIO ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Turn the function selector to BC, (center clockwise).
To set pointer turn tuning gang fully closed and set pointer to the index mark near the left hand end of the pointer carriage slide.
Loop should be maintained in same relative position to chassis as when receiver is in cabinet.
Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
27.	.1MFD	High side to Pin 6 (grid) of 7A8, (V24). Low side to chassis.	455KC (400% Mod.)	AM	Tuning gang fully open	Across voice coil	A38, A39, A40, A41	Adjust for maximum output.
28.	"	High side to ungrounded terminal of antenna socket. Low side to chassis.	1620KC	"	Set pointer to index mark near right hand end of pointer carriage slide.	"	A42	"
29.		Loop	1500KC	"	Tune for max. output.	"	A43	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
	Step 30 should be preformed only after antenna coil is replaced.							
30.		Loop	580KC	"	Tune for max. output.	Across voice coil.	A44	Adjust for maximum output. Repeat steps 29 and 30 until no further increase in output can be obtained.

FIG. 6

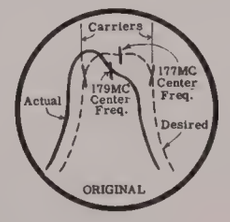


FIG. 7A

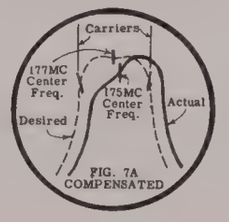
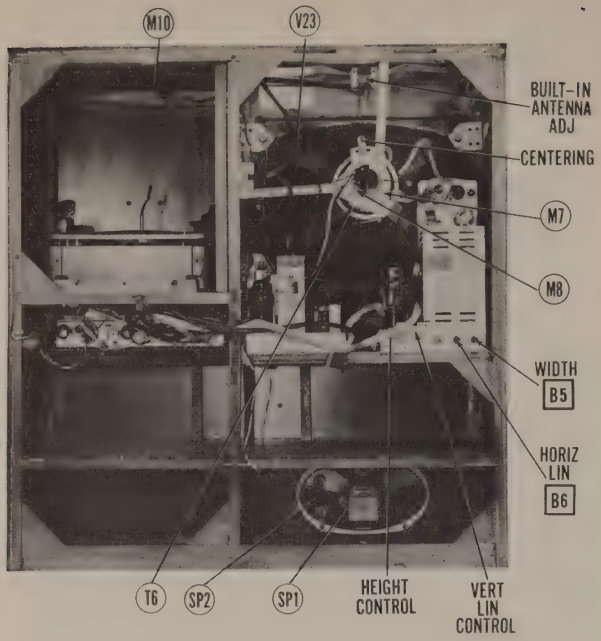


FIG. 7B

PHILCO MODELS 51-T1833, 51-T1835, 51-T1838, 51-T1870, 51-T1871, 51-T1872, 51-T1874, L, 51-T1875, 51-T1876

SWEEP CHASSIS-RESISTOR IDENTIFICATION

PHILCO MODELS 51-T1833, 51-T1835, 51-T1838, 51-T1870, 51-T1871, 51-T1872, 51-T1874, L, 51-T1875, 51-T1876



CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Pre-set the adjustments as follows:
Horizontal lock trimmer, (B3), one turn counter clockwise from tight.
Stabilizing core, (B2), extending 5/8 inch above coil mount.
Drive trimmer, (B4) one turn counter - clockwise from tight.
Turn the set on and tune in a TV station, preferably a test pattern.
Turn the horizontal hold control to the mid-position of its range.
Adjust the horizontal frequency slug, (B1), until the picture synchronizes horizontally.
Connect the vertical input lead of an oscilloscope to Pin 3 of the horizontal test socket, low side to chassis. If the picture falls out of sync adjust B1 to synchronize it.
Adjust the stabilizing core, (B2), until the broad and narrow peaks of the waveform on the oscilloscope are of equal height as shown in figure 8. If the picture falls out of sync during adjustment of B2, readjust B1. Note: In strong signal areas, free from noise, the tendancy of double triggering in the oscillator may be reduced by adjusting B2 until the rounded peak of the waveform is slightly lower than the pointed peak. The difference should be only slight to prevent rendering the oscillator too insensitive.
Remove the oscilloscope and turn the hold control fully clockwise.
Adjust B1 until 4 blanking bars, sloping downward to the right appear in the picture, (if this adjustment is made before the set has been thoroughly warmed up, adjust for 2 sloping bars).
Turn the hold control to maximum counter-clockwise and momentarily interrupt the signal by switching to another channel and back again.
Slowly turn the hold control clockwise and carefully note the least number of sloping bars present just before the picture pulls into sync.
If more than 3 1/2 bars are present, turn the lock trimmer, (B3), slightly clockwise, if less than 2 1/2 bars are present turn B3 slightly counter- clockwise.
Repeat the check and adjustment of B3 until 2 1/2 to 3 1/2 bars are present at the pull in point.
Turn the hold control fully clockwise and adjust B1 for 4 bars sloping downward to the right, (2 bars if set is not warmed up).
Adjust the horizontal drive trimmer, (B4), counter-clockwise until maximum picture width is obtained and then 1/2 turn farther.
Adjust the width slug, (B5), until the picture is of proper width.
Adjust the horizontal linearity slug, (B6), until the picture is symmetrical from left to right.

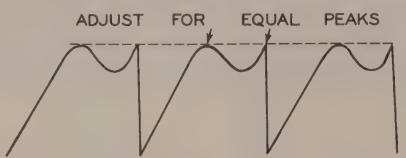


FIG. 8

FM TRAP ADJUSTMENT

The FM trap A44 has been pre-set at the factory to reject 100MC interference and should not normally require further adjustment.
However if interference is encountered from a strong FM station, A44 may be adjusted to eliminate or minimize the interference.

TV PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	NOTES
		PHILCO PART No.	STANDARD REPLACEMENT		
V1	RF Amplifier	6CB6	6CB6	6CK	
V2	Converter	12AV7	12AV7	7BT	
V3	1st Video IF Amp.	6AU6	6AU6	7BK	
V4	2nd Video IF Amp.	6AU6	6AU6	7BK	
V5	3rd Video IF Amp.	6AU6	6AU6	7BK	
V6	4th Video IF Amp.	6CB6	6CB6	6CK	
V7	Video Detector - AGC Rectifier - 1st Sound IF Amp.	12AU7	12AU7	9A	
V8	Video Amplifier - 1st Sync. Sep.	12AV7	12AV7	7BT	
V9	Video Output	6AQ5	6AQ5	8CK	
V10	2nd Sound IF Amp.	6AU6	6AU6	7BK	
V11	Ratio Detector - AF Amplifier	6T8	6T8	9E	
V12	Audio Output	6Y6G	6Y6G	7AC	
V13	2nd Sync. Sep. - Noise Limiter	12AU7	12AU7	9A	
V14	Vert. Oscillator - Sync Phase Inverter	7N7	7N7	8AC	
V15	Vert. Output	6S4	6S4	9AC	
V16	Horiz. AFC-Horiz. Oscillator	6SN7GT	6SN7GT	8BD	
V17	Horiz. Output	6CD6G	6CD6G	5BT	
V18	Damper	6BY5G	6BY5G	6CN	
V19	HV Rectifier	1B3GT	1B3GT	3C	
V20	HV Rectifier	1X2	1X2	7CB	
V21	LV Rectifier	5U4G	5U4G	5T	
V22	LV Rectifier	5U4G	5U4G	5T	
V23	Picture Tube	17AP4A	17AP4A	12D	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	PHILCO PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	
C1	40	450	30-2568-5	E3A157		UPT4045		TVL-1820	Filter
C2A	40	475	30-2570-62	AF8422X		UPT421l		TVL-4840	▲ Filter
B	20	475				45			■ Filter
C	10	475							▲ Filter
D	10	475							Vert. Output Dec.
C3	10	25	30-2417-8	E26E117		BR102A		TVA-1204	Filter
C4	25	25		PRS25/25		BR252A		TVA-1205	Vert. Output Cathode
C5	10	475	30-2417-19	PRS500/10		BR1650A		TVA-1802	Decoupling † †
C6A	40	450	30-2570-41	AF8422J		UPT421l		TVL-4840	▲ Filter
B	10	450				45			■ V. Output Screen
C	20	450							▲ Decoupling
D	10	450							Decoupling
C7A	30	450	30-2570-73	AFH6J10I8A		UPT345-		TVL-3723	■ Filter
B	40	350				435C5			▲ Output Screen
C	50	25							Output Cathode
C8	2	50	30-2417-7	E26E6		BBR2-50T		TVA-1301	Stabilizing Cap
C9	20		62-02030911	SI20NPO	TCZ-20		NPOK-200		Fixed Trimmer
C10	39		62-03940911	SI39	D6-390		GP1K-390		RF Coupling
C11	10000		30-1238-2	BPD-01	DD-103		821-01	36C1	AGC Filter
C12	220		30-1225-11	SI220	D6-221		GP2K-221	19C13	RF Amp. Dec.
C13	470		62-14700l011	SI470	D6-471		GP2K-471	19C15	RF Amp. Screen
C14	.5-3		31-6520-1		829-3				Variable Trimmer
C15	220		30-1225-11	SI220	D6-221		GP2K-221	19C13	RF Amp. Fil.
C16	.68		30-1221-11		TCZ-.68				RF Coupling
C17	220		30-1225-11	SI220	D6-221		GP2K-221	19C13	RF Coupling
C18	33		62-03300900l	SI33	D6-330		GP1K-330	19C24	RF Coupling
C19	3.3		31-6520-1	SI3.3NPO	TCZ-3.3		NPOK-3R3		RF Coupling
C20	1.2		30-1221-7						RF Coupling
C21	.5-3		31-6520-1		829-3				Variable Trimmer
C22	1		30-1224-7		TCZ-1				Osc. Coupling
C23	220		30-1225-11	SI220	D6-221		GP2K-221	19C13	Osc. Plate Dec.
C24	10		30-1224-51	SI10N750	TCN-10		N750K-100	19C4	Osc. Grid Cap
C25	220		30-1225-11	SI220	D6-221		GP2K-221	19C13	Osc. Feedback
C26	.5-3		31-6520-1		829-3				Variable Trimmer
C27	220		30-1225-11	SI220	D6-221		GP2K-221	19C13	Conv. Fil. Bypass
C28	1500		30-1225-19	SI1500	D6-152		GP2L-152	29C8	Conv. Plate Dec.
C29	15		62-01540901l	SI15	D6-150		GP1K-150	19C22	Fixed Trimmer
C30	470		62-14700100l	SI470	D6-471		GP2K-471	19C15	IF Coupling
C31	1500		62-21500101l	SI1500	D6-152	1W5D15	GP2L-152	29C8	AGC Filter
C32	1500		62-21500101l	SI1500	D6-152	1W5D15	GP2L-152	29C8	1st V. IF Dec.
C33	39		62-03940911	SI39	D6-390	5W5Q4	GP1K-390		Fixed Trimmer
C34	100		62-11000900l	SI100	D6-101	5W5T1	GP1K-101	19C11	IF Coupling
C35	1500		62-21500101l	SI1500	D6-152	1W5D15	GP2L-152	29C8	AGC Filter
C36	1500		62-21500101l	SI1500	D6-152	1W5D15	GP2L-152	29C8	2nd V. IF Dec.
C37	22		62-02200900l	SI22	D6-220		GP1K-220	19C23	Fixed Trimmer
C38	33		62-03300000l	SI33	D6-330	5W5Q3	GP1K-330	19C24	IF Coupling
C39	1500		62-21500101l	SI1500	D6-152	1W5D15	GP2L-152	29C8	AGC Filter
C40	.22	200	45-3505-49	P488-22		GT2P25		2TM-P22	AGC Filter #
C41	1500		62-21500101l	SI1500	D6-152	1W5D15	GP2L-152	29C8	3rd V. IF Dec.
C42	.22	200	45-3505-49	P488-22		GT2P25		2TM-P22	AGC Filter
C43	.1	200	45-3505-47	P288-1		PTE4P1		2TM-P1	AGC Filter
C44	1500		62-21500101l	SI1500	D6-152	1W5D15	GP2L-152	29C8	4th V. IF Screen
C45	1500		62-21500101l	SI1500	D6-152	1W5D15	GP2L-152	29C8	4th V. IF Cathode
C46	470		62-14700100l	SI470	D6-471	5W5T5	GP2K-471	19C15	IF Coupling
C47	1500		62-21500101l	SI1500	D6-152	1W5D15	GP2L-152	29C8	RF Bypass
C48	56		62-05640900l	SI56	D6-560	5W5Q5	GP1K-560	19C28	AGC Plate
C49	8		30-1224-13	SI8.2NPO	TCZ-6.8	5W5Q1	NPOK-8R2	19C3	V. Diode Filter
C50	.047	200	45-3505-62	P288-047	DF-503	PTE4S5		2TM-S47	Video Coupling
C51	68		62-06840901l	SI68	D6-680	5W5Q7	GP1K-680	19C10	Fixed Trimmer
C52	.0047	600	45-3505-56	P688-0047	D6-472	PTE6D5	GP2-333-472	6TM-D47	V. Amp. Cathode §
C53	56		62-05640900l	SI56	D6-560	5W5Q5	GP1K-560	19C28	Peaking †
C54	.22	400	45-3505-48	P488-22		GT4P25		4TM-P22	Video Coupling
C55	56		62-05640900l	SI56	D6-560	5W5Q5	GP1K-560	19C28	V. Output Cathode
C56	.047	400	45-3505-62	P488-047	DF-503	PTE4S5		4TM-S47	Video Coupling
C57	.47	400	45-3500-4	P488-47		GT4P5		4TM-P5	Pic. Tube Cathode
C58	56		62-05640900l	SI56	D6-560	5W5Q5	GP1K-560	19C28	S. IF Coupling
C59	.01	400	45-3505-58	P488-01	D6-103	PTE4S1	821-01	4TM-S1	1st S. IF Dec.

TV PARTS LIST AND DESCRIPTIONS (Continued)

CAPACITORS (CONT.)

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA PHILCO PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C60	1500		63-21500D21	SD350	D6-152	1WSD15	GP2L-0015	29C8	S. IF Coupling
C61	.0033	400	45-3505-55	P688-0033	D6-332	PTE6D33	GP2-333-332	67M-D33	2nd S. IF Dec.
C62	330		60-10335407	SI330	D6-331	5WS7J	GP2K-131	19C14	RF Bypass
C63	1500		62-21500001	SD500	D6-152	1WSD15	GP2L-152	29C8	De-emphasis
C64	.0022	400	45-3505-54	P688-0022	D6-322	PTE6D22	GP2M-222	67M-D22	De-emphasis
C65	.01	400	45-3505-58	P688-01	D6-103	PTE4S1	821-01	67M-S1	Audio Coupling * *
C66	.015	200	45-3505-59	P288-015		PTE8S15		67M-S15	Tone Comp.
C67	.01	400	45-3505-58	P488-01	D6-103	PTE4S1	821-01	67M-S1	Tone Comp. †
C68	.001	400	45-3505-52	P688-001	D6-102	PTE6D1	GP2L-102	67M-D1	Audio Coupling ¶
C69	.1	400	45-3505-53	P488-1		PTE4P1		67M-P1	A.F Amp. Dec
C70	.01	400	45-3505-57	P488-01	D6-103	PTE4S1	821-01	67M-S1	Audio Coupling
C71	.022	1000	45-3505-60	P1068-022		PTE6S2		MD-S22	Output Plate †
C72	.033	400	45-3505-61	P488-033	D6F-203	PTE4S3		67M-S22	Sync. Coupling
C73	.015	200	45-3505-59	P288-015		PTE8S15		67M-S15	Sync. Coupling
C74	180	500	30-1224-5	SI180	D6-181	5WS7J	GP2K-181	1FM-33	Sync. Coupling
C75	.047	400	45-3505-62	P488-047	D6F-503	PTE4S5		67M-S47	Sync. Coupling
C76	1	400	45-3505-47	P488-1	DF-104	PTE4P1		67M-P1	Decoupling
C77	.01	400	45-3505-58	P488-01	D6-103	PTE4S1	821-01	67M-S1	Integrator Net
C78	.0047	600	45-3505-56	P688-0047	D6-472	PTE6D5	GP2-333-472	67M-D47	Integrator Net
C79	.022	200	45-3505-60	P488-022	DF-203	PTE4S2		67M-S22	Integrator Net
C80	.047	400	45-3505-62	P488-047		PTE4S5		67M-S47	Vert. Discharge
C81	.047	400	45-3505-62	P488-047	DF-503	PTE4S5		67M-S47	Vert. Sweep Coupling
C82	.015	400	45-3505-59	P488-015		PTE4S15		67M-S15	Vert. Shaping
C83	.1	500	60-1025237	SI120	D6-121	5RST15	GP2K-121	19C39	Horiz. Sync. Coupling
C84	.0022	400	45-3505-54	P688-0022	D6-222	PTE6D2	GP2-333-222	67M-D22	Horiz. Sync. Coupling
C85	.15	200	45-3505-64	P288-15		PTE8S15		67M-P15	AFC Filter
C86	.022	200	45-3505-63	P488-022	DF-203	PTE4S2		67M-S22	AFC Filter
C87	.047	400	45-3505-62	P488-047	DF-503	PTE4S5		67M-S47	Horiz. AFC Plate
C88	330	1000	30-1244-5	1469-BY-0002					Horiz. Osc. Grid
C89	10000	500	60-10103404	1467-01		1D3S1		1FM-11	Fixed Trimmer
C90	1320	500	60-10215404						Horiz. Discharge
C91	390	500		1469-0004	D6-391	5RST4	GP2K-391	MS-34	Horiz. Sweep Coupling †
C92	.001	600	45-3505-52	P688-001	D6-102	PTE6D1	GP2L-102	67M-D1	Horiz. Feedback
C93	12	500	30-1246	1469-0002	D6-120	5RST1	GP1K-120	MS-4	Horiz. Feedback
C94	150	500	60-10155407	1468-00015	D6-151	5WS7J15	GP2K-151	1FM-315	Voltage Divider
C95	33	1000	30-1244-6						Horiz. Feedback
C96	.047	400	45-3505-62	P488-047	DF-503	PTE4S5		67M-S47	Horiz. Output Screen
C97	.033	200	45-3505-61	P488-033		PTE4S3		67M-S3	Damper Filter
C98	.22	200	45-3505-64	P288-1		PTE2P1		67M-P1	Damper Filter
C99	.22	400	45-3505-49	P488-22		GT4P25		67M-P22	Damper Filter
C100	.001	600	45-3505-52	P688-001	D6-102	PTE6D1	GP2L-102	67M-D1	Fixed Trimmer ††
C101	200	500	45-3505-54	P288-47		GT2P5		67M-P47	Horiz. Sweep Coupling
C102	.0047	600	45-3505-56	P688-0047	D6-472	PTE6D5	GP2-333-472	67M-D47	Fixed Trimmer
C103	500	10000	30-1243-5	HV10C	TV3-500				Voltage Doubler Cap
C104	500	10000	30-1229-6	HV10C	TV3-501				HV Filter
C105	.01	600	30-1226-1	P688-01	D6-103	PTE4S1	821-01	67M-S1	Line Filter
C106	.01	600	30-1226-1	P688-01	D6-103	PTE4S1	821-01	67M-S1	Line Filter
C107	.0033	400	45-3505-55	P688-0033	D6-332	PTE6D3	GP2-333-332	67M-D3	Fixed Trimmer
C108	33		60-10330003	3133	D6-330	5WS3	GP2K-33	19C24	Noise Limiter Plate ‡

† Some models use 220MMF in this application. Mfgrs. part number 60-10225417.
‡ Some models use .01MFD in this application.
* Not used in all models.
* Some models use .47MFD in this application.
¶ Some models use .0068MFD in this application.
** Some models use .0047MFD in this application.
†† Some models use .1MFD in this application.
‡‡ Some models use .0022MFD in this application.

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA PHILCO PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	5Meg	1	▲▲33-5563-28		RTV-240	SBBT-652-S	Tone Control - Front
B	2Meg	1					Volume Control And SW - Tapped ① 1 Meg - Rear
R2A	75KΩ	1	▲33-5563-26		RTV-241	SBB-651	Horizontal Hold - Front
B	250KΩ	1					Vertical Hold - Rear
R3A	2500Ω	2	▲33-5563-27		RTV-242		Contrast Control - Wire Wound - Front
B	100KΩ	1					Brightness Control - Rear
R4A	3 5Meg	1	33-5565-10	Q11-239	AM-84-S	AM-83	Height Control
B	Shaft		Not req.	HQ	FKS-1/4	AK-1	Attach To R4A Per Instructions
R5	3.5Meg	2	33-5564-10	W-5000 ◆	43-5000 ◆	VR-135	Vertical Linearity Control - Wire Wound

◆ Fashion shaft to duplicate original.
▲ Models 51-T1234, 51-T2136, and 51-T2175 use control with part number 33-5563-36.
▲▲ Models 51-T1838 and 51-T1876 use control with part number 33-5563-32.
* Some models use control with part number 33-5563-35 in this application.
▲ Models 51-T1838, 51-T1876, 51-T2136 and 51-T2175 use control with part number 33-5563-33.

RESISTORS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA PHILCO PART No.	IRC PART No.	IDENTIFICATION CODES ALL RESISTORS ± 10% UNLESS OTHERWISE SPECIFIED
R6	180Ω	1	66-2183340	BTS-180	Antenna Loading - See Note 1
R7	1Meg 20%	1	66-5103840	BTS-1Meg	AGC Network
R8	4700Ω 20%	1	66-2473340	BTS-4700	RF Amp. Grid
R9	680Ω	1	66-2683540	BTS-6800	RF Amp. Screen
R10	330Ω 20%	1	66-1333840	BTS-330	RF Amp. Decoupling
R11	120Ω	1	66-2123340	BTS-1200	Antenna Coil Shunt - See Note 1
R12	100Ω	1	66-2103340		RF Coil Shunt
R13	100KΩ	1	66-4103340	BTS-100K	Mixer Grid
R14	330Ω 20%	1	66-1333840	BTS-330	Mixer Plate
R15	10KΩ	1	66-3103340	BTS-10K	Osc. Grid
R16	1200Ω	1	66-2123340	BTS-1200	Osc. Plate
R17	330Ω	1	66-1333840	BTS-330	AGC Network
R18	15KΩ	1	66-3153340		1st Video IF Amp. Grid
R19	68Ω	1	66-0683340		1st Video IF Amp. Cathode
R20	330Ω	1	66-1333840	BTS-330	1st Video IF Amp. Decoupling
R21	12KΩ	1	66-3123340		2nd Video IF Amp. Grid
R22	68Ω	1	66-0683340		2nd Video IF Amp. Cathode
R23	33Ω	1	66-1333840	BTS-330	Decoupling
R24	33Ω	1	66-1333840	BTS-330	AGC Network
R25	33KΩ	1	66-3333840	BTS-33K	3rd Video IF Transformer Shunt
R26	12KΩ	1	66-3123340		3rd Video IF Amp. Grid
R27	68Ω	1	66-0683540	BTS-68	3rd Video IF Amp. Cathode
R28	8200Ω	1	66-2823540	BTS-8200	4th Video IF Transformer Shunt

RESISTORS (CONT.)

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA PHILCO PART No.	IRC PART No.	IDENTIFICATION CODES
R29	180Ω	1	66-1183340	BTS-180	4th Video IF Amp. Cathode - See Notes 2 and 3
R30	330Ω	1	66-1333840	BTS-330	4th Video IF Amp. Screen
R31	5800Ω	1	66-2563440	BTA-5800	4th Video IF Amp. Plate - See Note 4
R32	330KΩ	1	66-4338340	BTS-330K	AGC Load
R33	100KΩ	1	66-4103340	BTS-100K	AGC Network
R34	100KΩ	1	66-4103340	BTS-100K	AGC Network
R35	3300Ω	1	66-2333840	BTS-3300	Video Det. Diode Load
R36	33Ω	1	66-1333840	BTS-330	Decoupling
R37	1000Ω	1	66-2103840	BTS-1000	Voltage Divider
R38	150KΩ	1	66-4153840	BTS-150K	Voltage Divider
R39	10Meg 20%	1	66-5103840	BTS-10Meg	Bias Network - See Notes 5 and 6
R40	1.2Meg	1	66-5123840	BTS-1.2Meg	Video Amp. Grid
R41	100Ω	1	66-1103840	BTS-100	Video Amp. Cathode - See Note 1
R42	2700Ω	1	66-2273840	BTS-2700	Video Amp. Plate
R43	2700Ω	1	66-2273840	BTS-2700	Video Amp. Plate
R44	3900Ω	1	66-2393840	BTS-3900	Video Peaking Coil Shunt - See Note 7
R45	5600Ω	1	66-2563440	BTA-5600	Decoupling
R46	1.5Meg	1	66-5183840	BTS-1.5Meg	Bias Network
R47	1.2Meg	1	66-5123840	BTS-1.2Meg	Video Output Grid
R48	10KΩ	1	66-3103840	BTS-10K	Video Output Screen
R49	1800Ω	5	33-1335-102	1 3/4A-1750	Video Output Plate - Wire Wound
R50	100KΩ	10	66-4103840	BTS-100K	Voltage Divider
R51	1300Ω	5	33-2435-31	1 3/4A-1330	Decoupling - Wire Wound
R52	2200Ω 20%	1	66-2223840	BTS-2200	Contrast Control Shunt
R53	470KΩ	1	66-4473840	BTS-470K	Picture Tube Grid
R54	150KΩ	1	66-4153840	BTS-150K	Picture Tube Cathode
R55	120KΩ	1	66-4123840	BTS-120K	1st Sound IF Amp. Grid
R56	150Ω	1	66-1153840	BTS-150	1st Sound IF Amp. Cathode
R57	1000Ω	1	66-2103840	BTS-1000	1st Sound IF Amp. Decoupling
R58	560KΩ	1	66-4563840	BTS-560K	2nd Sound IF Amp. Grid
R59	10KΩ	1	66-3104340	BTA-10K	2nd Sound IF Amp. Decoupling
R60	22KΩ	1	66-3223840	BTS-22K	Voltage Divider
R61	270Ω	1	66-1273840	BTS-270	Balancing
R62	22KΩ	1	66-3223840	BTS-22K	De-emphasis - See Note 8
R63	33KΩ	1	66-3333840	BTS-33K	AVC Network
R64	10Meg	1	66-5103840	BTS-10Meg	AF Amp. Grid
R65	270KΩ	1	66-4273840	BTS-270K	AF Amp. Plate
R66	100KΩ	1	66-4103840	BTS-100K	AF Amp. Decoupling
R67	470KΩ	1	66-4473840	BTS-470K	Output Grid
R68	390Ω	1	66-1393440	BTA-390	Output Cathode - See Note 19
R69	390Ω	1	66-1393440	BTA-390	Output Cathode - See Note 19
R70	5600Ω	3	66-2563540	BTS-5600	Output Screen
R71	10Ω	10	66-1103405	1 3/4A-100	Output Decoupling - Wire Wound
R72	18KΩ	1	66-3183540	BTS-18K	Voltage Divider
R73	33KΩ	1	66-3333440	BTA-33K	Voltage Divider
R74	270Ω	1	66-1273840	BTS-270	Feedback Network
R75	15Ω	1	66-0153340	BW-1-15	Feedback Network - See Note 9
R76	56KΩ	1	66-3563440	BTA-56K	Tone Compensation
R77	1.2Meg 20%	1	66-5123840	BTS-1.2Meg	1st Sync. Sep. Grid
R78	10KΩ	1	66-3103840	BTS-10K	1st Sync. Sep. Cathode
R79	270KΩ	1	66-4273840	BTS-270K	2nd Sync. Sep. Grid
R80	100KΩ	1	66-4103840	BTS-100K	2nd Sync. Sep. Plate
R81	15KΩ	1	66-3153840	BTS-15K	Voltage Divider
R82	6.8Meg	1	66-5683940	BTS-6.8Meg	Bias Network
R83	240KΩ 5%	1	66-4243340		Voltage Divider
R84	39KΩ	1	66-3393540	BTS-39K	Voltage Divider
R85	47KΩ	1	66-3473540	BTS-47K	Series Test Socket
R86	10KΩ	1	66-3103840	BTS-10K	Sync. Phase Inv. Grid
R87	1Meg 20%	1	66-5103840	BTS-1Meg	Sync. Phase Inv. Grid
R88	15KΩ	2	66-3153340	BTS-15K	Sync. Phase Inv. Plate
R89	22KΩ	2	66-3223540	BTS-22K	Sync. Phase Inv. Decoupling - See Note 10
R90	4700Ω	1	66-2473540	BTS-4700	Voltage Divider
R91	10KΩ	1	66-3103840	BTS-10K	Integrator
R92	4700Ω	1	66-2473540	BTS-4700	Integrator
R93	4700Ω	1	66-2473540	BTS-4700	Integrator
R94	270KΩ	1	66-4273340	BTS-270K	Vertical Oscillator Grid - See Note 11
R95	1.8Meg	1	66-5183540	BTS-1.8Meg	Vertical Oscillator Plate - See Note 12
R96	15KΩ	1	66-3153540	BTS-15K	Vertical Oscillator Transformer Shunt
R97	5000Ω	1	66-2563540	BTS-5000	Vertical Peaking - See Note 13
R98	2.2Meg	1	66-5223540	BTS-2.2Meg	Vertical Output Grid
R99	470Ω	1	66-1473540	BW-1-470	Vertical Output Cathode - Wire Wound
R100	5Ω	5	33-1335-18	1 3/4A-5000	Vertical Output Decoupling - Wire Wound
R101	100KΩ 20%	1	66-4104340	BTA-100K	Damping
R102	3.3Meg 20%	1	66-4334340	BTA-3.3Meg	Voltage Divider
R103	47KΩ	1	66-3473540	BTS-47K	Voltage Divider - See Note 14
R104	820KΩ 5%	1	66-4824240	BTS-820K-5%	Horizontal AFC Grid
R105	330KΩ	1	66-4334240	BTA-330K	Horizontal AFC Cathode
R106	82KΩ	1	66-3824340	BTA-82K	Horizontal AFC Plate - See Note 15
R107	8200Ω	1	66-2823540	BTS-8200	Horizontal AFC Filter
R108	470KΩ	1	66-4473540	BTS-470K	Voltage Divider
R109	560KΩ 5%	1	66-4563240	BTS-560K-5%	Horizontal Oscillator Grid
R110	33KΩ	1	66-3334340	BTA-33K	Horizontal Oscillator Plate
R111	680Ω	1	66-2683340	BTS-6800	Horizontal Oscillator Coil Shunt
R112	22KΩ 20%	1	66-3223540	BTS-22K	Horizontal Oscillator Coil Shunt
R113	220KΩ	1	66-4223540	BTS-220K	Horizontal Feedback Network
R114	22KΩ	1	66-3223340	BTA-22K	Horizontal Feedback Network
R115	2.2Meg	1	66-5223540		Horizontal Feedback Network
R116	100Ω 20%	1	66-1104340		Parasitic-Suppressor - See Note 16
R117	1Meg 20%	1	66-5103840	BTS-1Meg	Horizontal Output Grid - See Note 17
R118	1.5KΩ	5	33-1335-23	1 3/4A-15K	Horizontal Output Screen - Wire Wound
R119	390Ω	1	66-1393540	BTS-390	Centering Network
R120	470Ω	3	66-1473540	BTS-470	Anti-Ringing Coil Shunt
R121	18KΩ	1	66-3183540	BTA-18K	Decoupling - See Note 1
R122	4.7Ω	1	66-9473340	BW-1-4.7	HV Rectifier Filament
R123	4.7Ω	1	66-9473340	BW-1-4.7	HV Rectifier Filament
R124	2Meg	1	33-1352		HV Rectifier Load
R125	2Meg	1	33-1352		HV Rectifier Load
R126A	500Ω	10	33-3445-4		Voltage Divider - Wire Wound
B	400Ω	10			Voltage Divider - Wire Wound
R127	150KΩ	1	66-4153840	BTS-150K	Voltage Divider - See Note 1
R128	15KΩ	1	66-3153840	BTS-15K	Voltage Divider - See Note 1
R129	100KΩ	1	66-4103840	BTS-100K	Bias Network - See Note 1
R130	10KΩ	1	66-3103840	BTS-10K	Bias Network
R131	5700Ω	20	33-3446		Decoupling - Wire Wound
R132	2.6Ω	3			Filament Dropping - Wire Wound - See Note 18
R133	22Ω	1	66-0223340	BW-1-22	Isolation - Wire Wound - See Note 1
R134	10Ω 20%	1	66-0104340	BW-1-10	Series Pilot Light

RESISTORS (CONT.)

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA PHILCO PART No.	IRC PART No.	IDENTIFICATION CODES
R135	180KΩ	1		BTA-180K	Isolation - See Notes 1 and 20

Note 1. Not used in all models.
Note 2. Some models use 220Ω resistor in this application.
Note 3. Some models use 150Ω resistor in this application.
Note 4. Some models use 6800Ω resistor in this application.
Note 5. Some models use 8.2 meg resistor in this application.
Note 6. Some models use 4.7 meg resistor in this application.
Note 7. Some models use 10KΩ resistor in this application.
Note 8. Some models use 56KΩ resistor in this application.
Note 9. Some models use 27Ω resistor in this application.
Note 10. Some models use 27KΩ resistor in this application.
Note 11. Some models use 180KΩ resistor in this application.
Note 12. Some models use 68KΩ resistor in this application.
Note 13. Some models use 8200Ω resistor in this application.
Note 14. Some models use 33KΩ resistor in this application.
Note 15. Some models use 47KΩ resistor in this application.
Note 16. Some models use 47Ω resistor in this application.
Note 17. Some models use 470KΩ resistor in this application.
Note 18. Some models use length of wire in this application.
Note 19. Some models use single 180Ω resistor in place of R68 and R69.
Note 20. Some models use 100KΩ resistor in this application.

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC. 2	RATING SEC. 3	REPLACEMENT DATA PHILCO PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	117VAC 2A	635VCT .200ADC	5VAC ① 3A SEC. 4 6.3VAC ① 4.4A	32-8481			
			SEC. 5 6.3VAC ② 1.8A				
T2	117VAC ① 1.5A	24VAC ② 1.85A		32-8493 ①			

① Used in Models with Remote Control Unit.

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING DC RESISTANCE PRI.	RATING SEC.	REPLACEMENT DATA PHILCO PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	NOTES
T3	190Ω	365Ω	32-8431				Vertical Block Osc. Trans
T4	82Ω	52Ω	32-8465-2	HV0-5			Horizontal Output Trans.
	Tap 24Ω	Tap 1.3Ω	32-8509 ③				
		SEC. 3 00					
		SEC. 3 00					
T5	640Ω	22Ω	32-8454	A-8112 ②	A-3036 ②	T80-1 ②	Vertical Output Trans.
T6A	12Ω		32-9644	DY-7	MDF-70		Horizontal Deflection Coil
B	47Ω		32-9641 ③				Vertical Deflection Coil

② Drill one new mounting hole.
③ Used in some models.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	RATING SEC.	RATING DC RES. PRI.	RATING SEC.	REPLACEMENT DATA PHILCO PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
T7	2.3KΩ	3.5Ω	200Ω	.5Ω	32-8387-5	A-3849	A-3018	RO-2 ②	② Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS FIELD RES.	V. C. IMP.	REPLACEMENT DATA PHILCO PART No.	VIKING PART No.	QUAM PART No.	NOTES
SP1A	PM	3.2Ω	36-1611-7 ④	13213	13A4A	④ Used in Model 51-T1838
B	PM	3.2Ω	36-1640 ⑤			⑤ Used in Models 51-T1870, 51-T1872, 51-T1874
C	PM	3.2Ω	36-1640-1 ④			⑥ Used in Models 51-T1875, 51-T1876
	CONE DIA.	V. C. DIA.				
SP2A	12"	1"				
B	6 1/2"X10 1/2"	1"				

FILTER CHOKE

ITEM No.	RATINGS TOTAL DIRECT CURRENT	RATINGS RESISTANCE	RATINGS INDUCTANCE @ CURRENT 1000 ~	REPLACEMENT DATA PHILCO PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
L1	.34A	49Ω	2.5 Henries	32-8478-2				
L2	.18A	64Ω	1.5 Henries	32-8479-2				

COILS (RF-IF)

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA PHILCO PART No.	MEISSNER PART No.	NOTES
L3	Ant. Trans.	.7Ω	.4Ω	78-5787		
L4	Ant. Trans.	.7Ω	.4Ω			
L5	FM Trap	0Ω		32-4438-1		
L6	Ant. Coils	0Ω		76-5776		Switch-Wafer With Coils
L7	RF Choke	.4Ω		32-4113-22		
L8	RF Choke	0Ω				1 1/4 Turns of Capacitor Lead (C13) Around Itself
L9	RF Coils	0Ω		76-5770		Switch-Wafer With Coils
L10	Mixer Grid Coils	0Ω		76-5772		Switch-Wafer With Coils
L11	RF Choke	0Ω		32-4113-2		
L12	Osc. Coils	0Ω		76-5788		Switch-Wafer With Coils
L13	1st Video IF	.7Ω		32-4559-10		Tap ① .4Ω
L14	2nd Video IF	.3Ω		32-4486		
L15	Adj. Channel Sound Trap	0Ω		32-4303-3		
L16	3rd Video IF	.3Ω		32-4486		
L17	Adj. Channel Video Trap	.1Ω		32-4496		
L18	Fil. Choke	.1Ω		32-4112-15		

PHILCO MODELS 51-T1833, 51-T1835, 51-T1838, 51-T1870, 51-T1871, 51-T1872, 51-T1874, L, 51-T1875, 51-T1876

TV PARTS LIST AND DESCRIPTIONS (Continued)

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA PHILCO PART No.	REPLACEMENT DATA MEISSNER PART No.	NOTES
L19	RF Choke	.1Ω		32-4112-15		
L20	4th Video IF	.2Ω	.2Ω	32-4486-6		
L21	5th Video IF	.2Ω		32-4486		
L22	Fil. Choke	.1Ω		32-4112-15		
L23	Peaking	2.2Ω		32-4143-16		40 Microhenries
L24	Peaking	3.4Ω		32-4480-3	19-1920	100 Microhenries
L25	4.5MC Trap	1.8Ω		32-4463-5		
L26	Peaking			32-4143-18		Not used in all models.
L27	Peaking	3.7Ω		32-4480-8	19-1921	125 Microhenries
L28	Peaking	4.5Ω		32-4480-9	19-1921	180 Microhenries
L29	Peaking	3.4Ω		32-4480-3	19-1920	100 Microhenries
L30	Sound IF	5.2Ω		32-4449A		
L31	Ratio Det. Trans.	5.2Ω	.7Ω	32-4450-2		
L32	Fil. Choke	.1Ω		32-4112-15		
L33	Horiz. Osc. Trans.	62Ω	50Ω	32-4506		
L34	Horiz. Lin.	11Ω		32-4501-1		
L35A	Width Coil	2.8Ω		32-4468-6		Used in Models 51-T1838 Code 124, 51-T1870, 51-T1872, 51-T1874, 51-T1875, 51-T1876 Code 124
B	Width Coil			32-4505		
L36	Suppressor Coil	.2Ω		32-4112-24		10 Microhenries
L37	Anti-Ringing Coil	4.3Ω		32-4480		150 Microhenries

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA PHILCO PART No. FUSE	REPLACEMENT DATA PHILCO PART No. HOLDER	REPLACEMENT DATA LITTELFUSE PART No. FUSE	REPLACEMENT DATA LITTELFUSE PART No. HOLDER	REMARKS
M1	3AG Slo-Blo	8/10 A	45-2656-21	76-4519-2	313.800	357001	
M2	Length # 26 wire				318005 *		* 5 Amp. - PigTail
M3	Length #26 wire				318008 †		† 5 Amp. - PigTail

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA PHILCO PART No.		NOTES
M4	Bayonet	6-8	.15	Brown	34-2064		Type #47

MISCELLANEOUS

ITEM No.	PART NAME	PHILCO PART No.	NOTES
M5A	RF Tuner	76-5747	Models 51-T1833 Code 121, 51-T1870 Code 121, 51-T1871 Code 121, 51-T1872 Code 121, 51-T1874 Code 121, 51-T1875 Code 121, 51-T1876 Code 121
B	RF Tuner	76-6440-1	Models 51-T1871 Code 122, 51-T1872 Code 122
C	RF Tuner	76-6481-1	Models 51-T1835 Code 121, 51-T1838 Code 124
M6	Switch	76-6441	Includes Mounting Bracket (Model 51-T1838 Code 124)
M7	Focus Magnet	76-6126-2	
M8	Ion Trap	76-6077-1	
	Safety Glass	54-7943-26	Model 51-T1833, 51-T1870, 51-T1871
	Safety Glass	54-7943-22	Models 51-T1835, 51-T1838 Code 124
	Safety Glass	54-7943-29	Model 51-T1872
	Safety Glass	54-7943-21	Models 51-T1874, 51-T1874L
	Safety Glass	54-7943-17	Models 51-T1875, 51-T1876 Code 124
	Escutcheon	54-4850	Models 51-T1835, 51-T1838 Code 124, 51-T1876 Code 124
	Knob	76-6046	Channel Selector (Model 51-T1875)
	Knob	76-6386	Channel Selector (Models 51-T1835, 51-T1838 Code 124, 51-T1876 Code 124)
	Knob	76-6175	Channel Selector (Models 51-T1833, 51-T1870, 51-T1871, 51-T1872, 51-T1874)
	Knob	76-6175-1	Channel Selector (Model 51-T1874L)
	Knob	76-6387	Fine Tuning (Models 51-T1835, 51-T1838 Code 124, 51-T1876 Code 124)
	Knob	76-6104	Fine Tuning (Models 51-T1833, 51-T1870, 51-T1871, 51-T1872, 51-T1874 51-T1874L)
	Knob	76-6104-1	Fine Tuning (Model 51-T1875)
	Knob	54-4799-6	Brightness (Models 51-T1833, 51-T1835, 51-T1871)
	Knob	54-4799	Brightness (Models 51-T1838 Code 124, 51-T1875, 51-T1876 Code 124)
	Knob	54-4799-1	Brightness (Models 51-T1870, 51-T1872, 51-T1874)
	Knob	54-4799-2	Brightness (Model 51-T1874L)
	Knob	54-4797	Contrast (Models 51-T1833, 51-T1871)
	Knob	76-6048	Contrast (Models 51-T1835, 51-T1838 Code 124, 51-T1876 Code 124)
	Knob	54-4769	Contrast (Models 51-T1870, 51-T1872, 51-T1874)
	Knob	54-4761-1	Contrast (Model 51-T1874L)
	Knob	76-6048	Contrast (Model 51-T1875)
	Knob	76-6048	Horizontal Hold (Models 51-T1835, 51-T1838 Code 124, 51-T1875, 51-T1876 Code 124)
	Knob	54-4797	Horizontal Hold (Models 51-T1833, 51-T1871)
	Knob	54-4769	Horizontal Hold (Models 51-T1870, 51-T1872, 51-T1874)
	Knob	54-4769-1	Horizontal Hold (Model 51-T1874L)
	Knob	76-5794-2	Vertical Hold (Model 51-T1833)
	Knob	54-4799-6	Vertical Hold (Models 51-T1835, 51-T1871)
	Knob	54-4799	Vertical Hold (Models 51-T1838 Code 124, 51-T1876 Code 124)
	Knob	54-4799-1	Vertical Hold (Models 51-T1870, 51-T1872, 51-T1874)
	Knob	54-4799-2	Vertical Hold (Model 51-T1874L)
	Knob	54-4799	Volume (Models 51-T1838 Code 124, 51-T1876 Code 124, 51-T1835)
	Knob	54-4817-1	Volume (Models 51-T1833, 51-T1871)
	Knob	54-4817-1	Volume (Models 51-T1870, 51-T1872, 51-T1874)
	Knob	54-4799-3	Volume (Model 51-T1874L)
	Knob	54-4799	Tone (Model 51-T1835)
	Knob	76-6213	Tone (Model 51-T1838 Code 124, 51-T1876)
	Knob	76-5794-2	Tone (Models 51-T1870, 51-T1872, 51-T1874)
	Knob	76-6213-3	Tone (Model 51-T1874L)
	Knob	76-6375	TV-Phono (Models 51-T1871, 51-T1870)
	Knob	54-4750-7	Antenna (Model 51-T1874L)
	Knob	54-4750	Antenna (Models 51-T1833, 51-T1835, 51-T1838 Code 124, 51-T1870, 51-T1871, 51-T1872, 51-T1874, 51-T1875, 51-T1876 Code 124)

RADIO PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	NOTES
		PHILCO PART No.	STANDARD REPLACEMENT		
V24	Converter	7A8	7A8	8U	
V25	IF Amplifier	7B7	7B7	8V	
V26	Detector -AVC	7B6	7B6	8W	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	PHILCO PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	
C109	220		62-122001001	SI220	D6-221	5W5T2	GP2K-221	19C13	RF Coupling
C110	.047	200	45-3505-28	P288-047	DF-503	PTE4S5		2TM-S47	AVC Filter
C111	47	500	60-00475417	1468-00005	D6-470	5W5Q5	GP1K-470	1FM-45	Osc. Grid Cap
C112	.047	400	45-3505-28	P488-047	DF-503	PTE4S5		4TM-S47	Decoupling
C113	.047	400	45-3505-28	P488-047	DF-503	PTE4S5		4TM-S47	Decoupling
C114	37.5								Fixed Trimmer *
C115	.022	200	45-3505-60	P488-022	DF-203	PTE4S2		4TM-S22	Tone Comp.
C116	.0047	600	45-3505-56	P688-0047	D6-472	PTE6D5	GP2-333-472	6TM-D47	Audio Coupling
C117	.0047	600	45-3505-56	P688-0047	D6-472	PTE6D5	GP2-333-472	6TM-D47	Audio Coupling

* Not used in all models.

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	PHILCO PART No.	IRC PART No.	
R136	1Meg	1/2	66-5108340	BTS-1Meg	Converter Grid
R137	100KΩ	1/2	66-4108340	BTS-100K	Oscillator Grid
R138	2.2Meg	1/2	66-5228340	BTS-2.2Meg	AVC Network
R139	470KΩ	1/2	66-4478340	BTS-470K	AVC Network
R140	27KΩ	1/2	66-3278340	BTS-27K	Decoupling
R141	6500Ω	5	33-1335-99		Decoupling - Wire Wound
R142	47KΩ	1/2	66-3478340	BTS-47K	Diode Filter
R143	10Meg	1/2	66-6108340	BTS-10Meg	AF Amp. Grid
R144	220KΩ	1/2	66-4228340	BTS-220K	AF Amp. Plate
R145	47KΩ	1/2	66-3478340	BTS-47K	Phono Input Shunt
R146	6.8Ω	2	66-9685360	BW-$\frac{1}{2}$-6.8	Series Phono Compartment Light - Wire Wound
R147	.75Ω	1		BW-1-.75	Filament Dropping - Wire Wound - See Note 21

Note 21. Some models use .68Ω resistor in this application.

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	PHILCO PART No.	MEISSNER PART No.	
L38	Loop Ant.					One Turn Around Cabinet
L39	Ant. Coil	2.7Ω		32-4413-2		Tap @ .3Ω
L40	Osc. Coil	2.7Ω	7.8Ω	32-4263		
L41	1st IF	13Ω	13Ω	32-4160A		
L42	2nd IF	17Ω	17Ω	32-4240A		

PHONO CARTRIDGE and NEEDLE

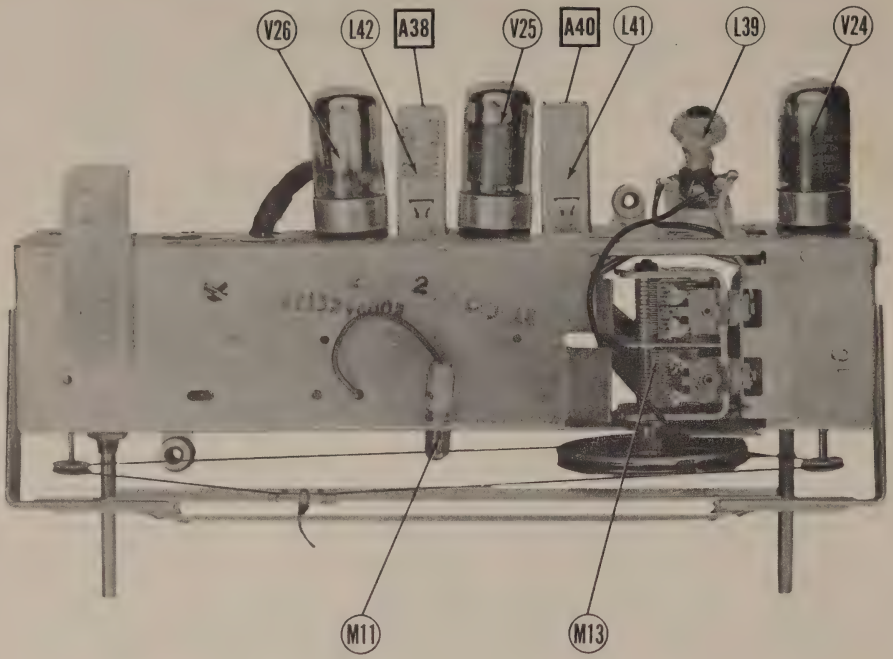
ITEM No.	REPLACEMENT DATA						REMARKS
	PHILCO PART No.	ASTATIC PART No.		SHURE PART No.		ELECTRO-VOICE PART No.	
		CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	
M9	76-4649							

DIAL LIGHTS

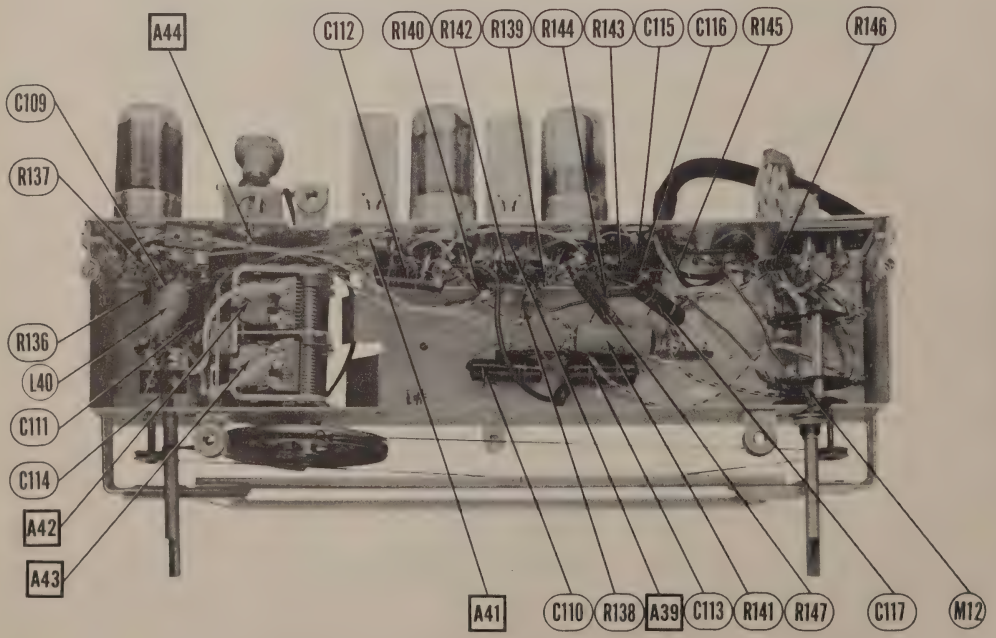
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					PHILCO PART No.		
M10	Bayonet	6-8	.15	Brown	34-2064		Type #47
M11	Bayonet	6-8	.15	Brown	34-2064		Type #47 (Phono Compartment Light)

MISCELLANEOUS

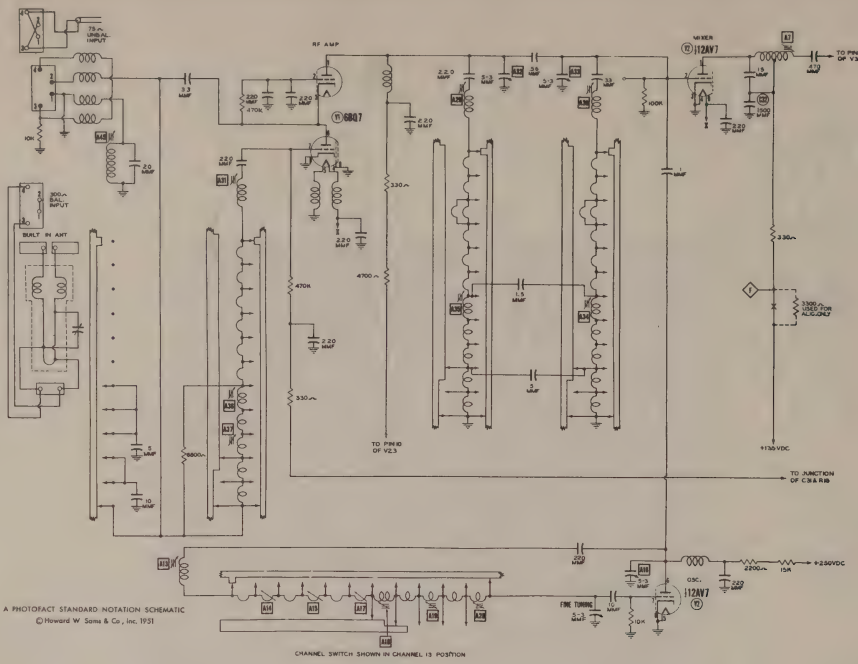
ITEM No.	PART NAME	PHILCO PART No.	NOTES
M12	Switch	42-1947	Function Phono-AM-TV
M13	Tuning Capacitor	31-2751-9	AM Tuning (33-542MMF) (29-216MMF)
	Knob	54-4798-2	Tuning (Models 51-T1872, 51-T1874)
	Knob	54-4798-3	Tuning (Model 51-T1874L)
	Knob	54-4798	Tuning (Models 51-T1875, 51-T1876 Code 124, 51-T1875 Code 124)
	Knob	54-4798-6	Function Switch (Models 51-T1872, 51-T1874)
	Knob	54-4798-7	Function Switch (Model 51-T1874L)
	Knob	54-4798-4	Function Switch (Models 51-T1875, 51-T1876 Code 124)
	Pointer	56-5630-32	Dial
	Panel	54-8171	Diffusing
	Scale	54-5114	Dial (Model 51-T1872)
	Scale	54-5110	Dial (Models 51-T1874, 51-T1874L)
	Scale	54-5105	Dial (Models 51-T1875, 51-T1876 Code 124)



RADIO CHASSIS-TOP VIEW



RADIO CHASSIS-BOTTOM VIEW



ALTERNATE TUNER SCHEMATIC

DISASSEMBLY INSTRUCTIONS

TV REMOVAL

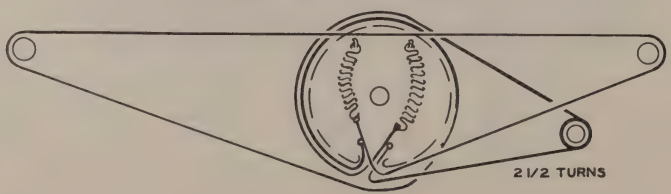
1. Remove eight push-on type control knobs.
2. Remove eight wood screws from rear cover. Remove rear cover.
3. Disconnect built-in antenna.
4. Disconnect ground lead.
5. Disconnect volume control plug.
6. Disconnect RF-IF chassis plug.
7. Disconnect radio power plug.
8. Disconnect speaker.
9. Disconnect picture tube socket.
10. Remove four 1/4" hex head bolts from RF-IF chassis. Remove chassis.
11. Disconnect yoke plug.
12. Disconnect high voltage lead.
13. Remove five 1/4" hex head bolts from sweep chassis. Remove chassis.

NOTE: FOR PICTURE TUBE REMOVAL IT IS NECESSARY TO REMOVE BOTH THE CHASSIS AS OUTLINED ABOVE.

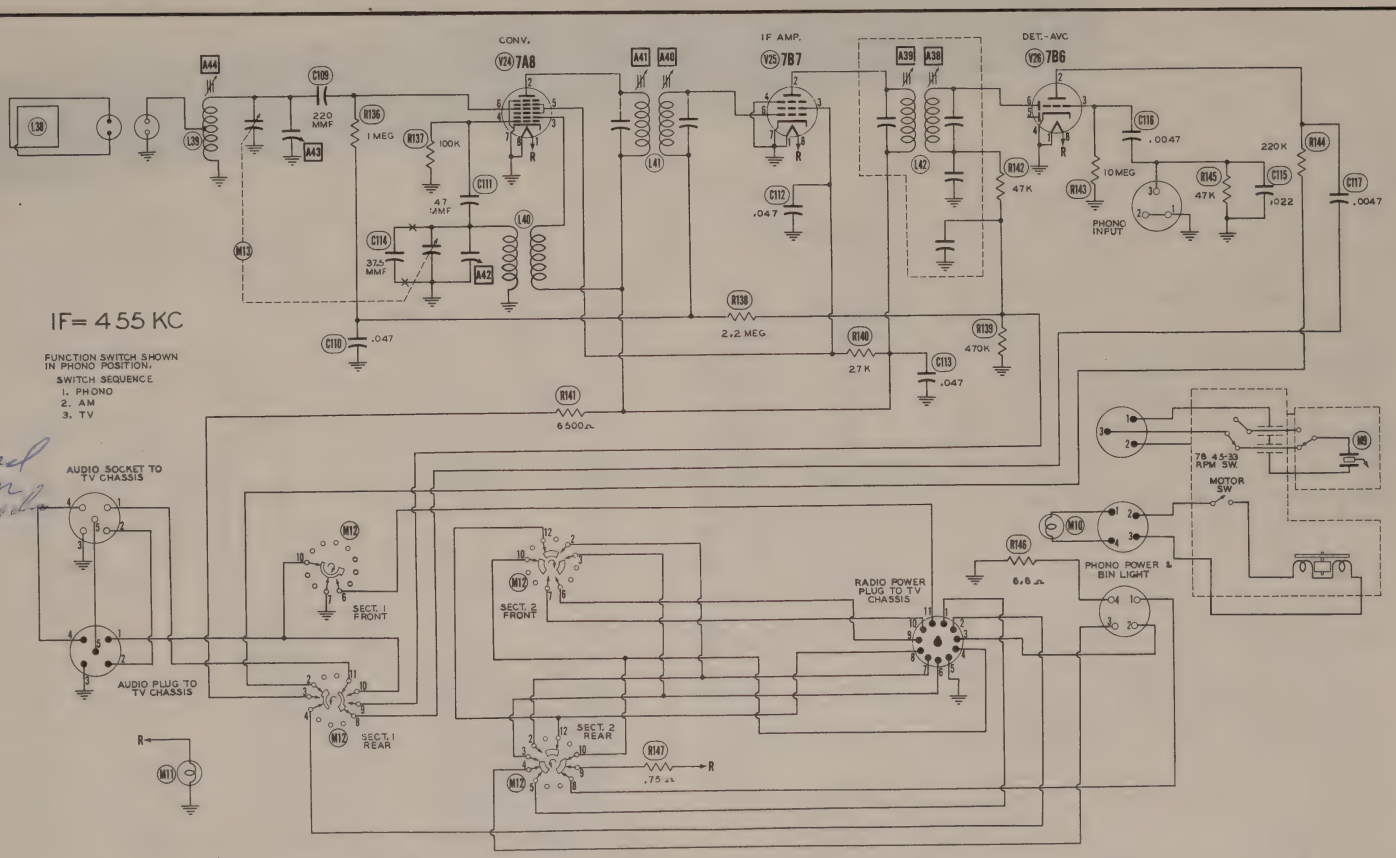
AM-FM-RADIO REMOVAL

1. Remove two push-on type control knobs.
2. Remove eleven wood screws from rear cover. Remove rear cover.
3. Disconnect AM antenna.
4. Disconnect FM antenna.
5. Disconnect the 110 volt AC phono power plug.
6. Disconnect phono audio input plug.
7. Remove three 5/16" hex head bolts from radio chassis. Remove chassis.
8. Remove four 11/32" hex nuts from speaker. Remove speaker.

TUNING GANG FULLY CLOSED



DIAL CORD STRINGING



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V24	7A8	6VAC	175VDC	175VDC	8-15VDC	70VDC	-4.2VDC	0V	0V
V25	7B7	0V	175VDC	70VDC	0V	0V	-.3VDC	0V	6VAC
V26	7B6	0V	▲140VDC	-.6VDC	0V	0V	-7.8VDC	0V	6VAC

‡ TAKEN WITH VACUUM TUBE VOLTMETER

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V24	7A8	.8Ω	†12KΩ	†12KΩ	100KΩ	†39KΩ	3.7Meg	0Ω	0Ω
V25	7B7	0Ω	†12KΩ	†39KΩ	0Ω	0Ω	2.7Meg	0Ω	.8Ω
V26	7B6	0Ω	▲†225KΩ	10Meg	0Ω	Inf.	820KΩ	.3Ω	.8Ω

▲ TAKEN IN PHONO POSITION
† MEASURED FROM PIN 8 OF V22

FUNCTION SWITCH IN AM POSITION UNLESS OTHERWISE STATED

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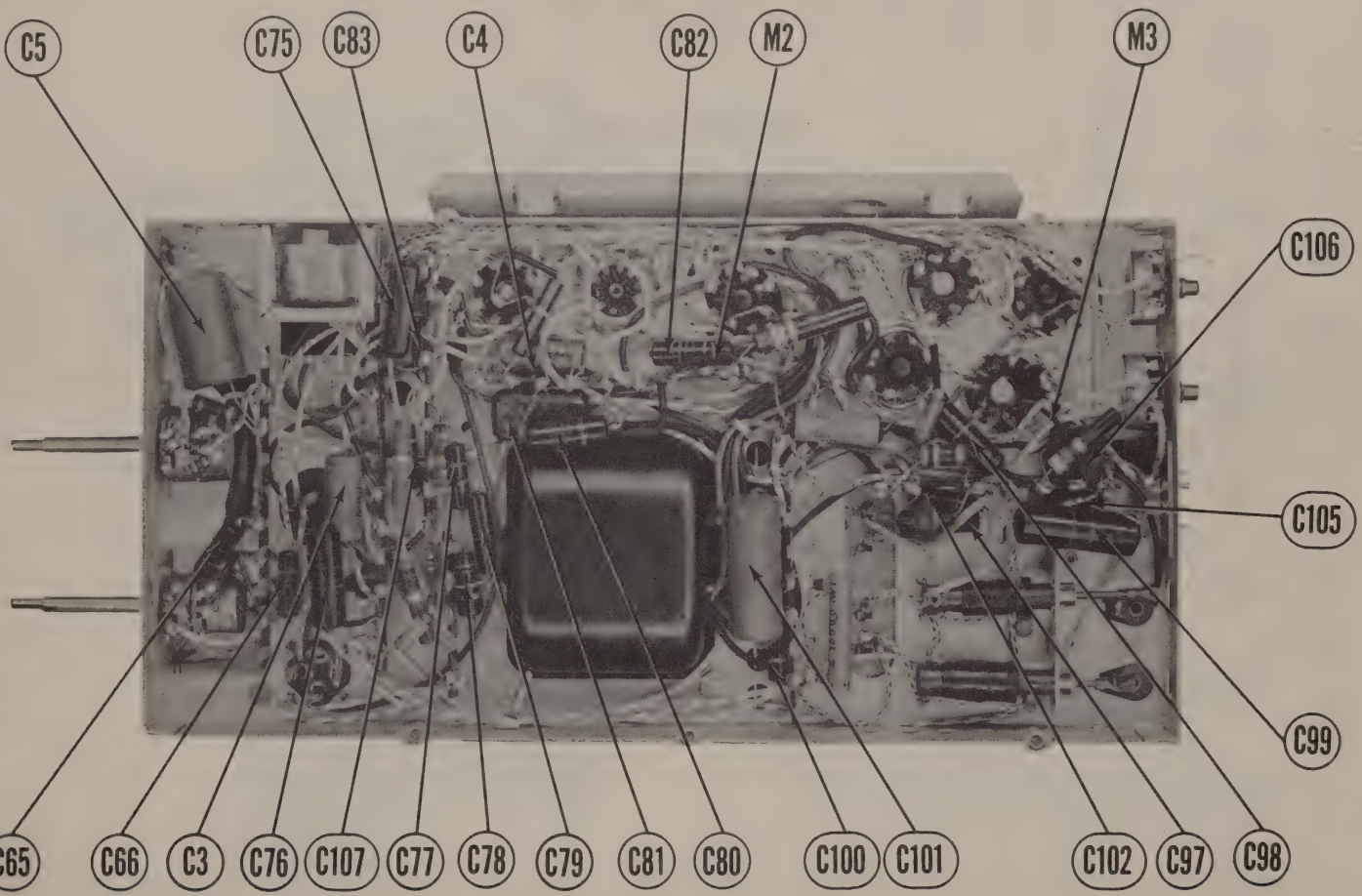
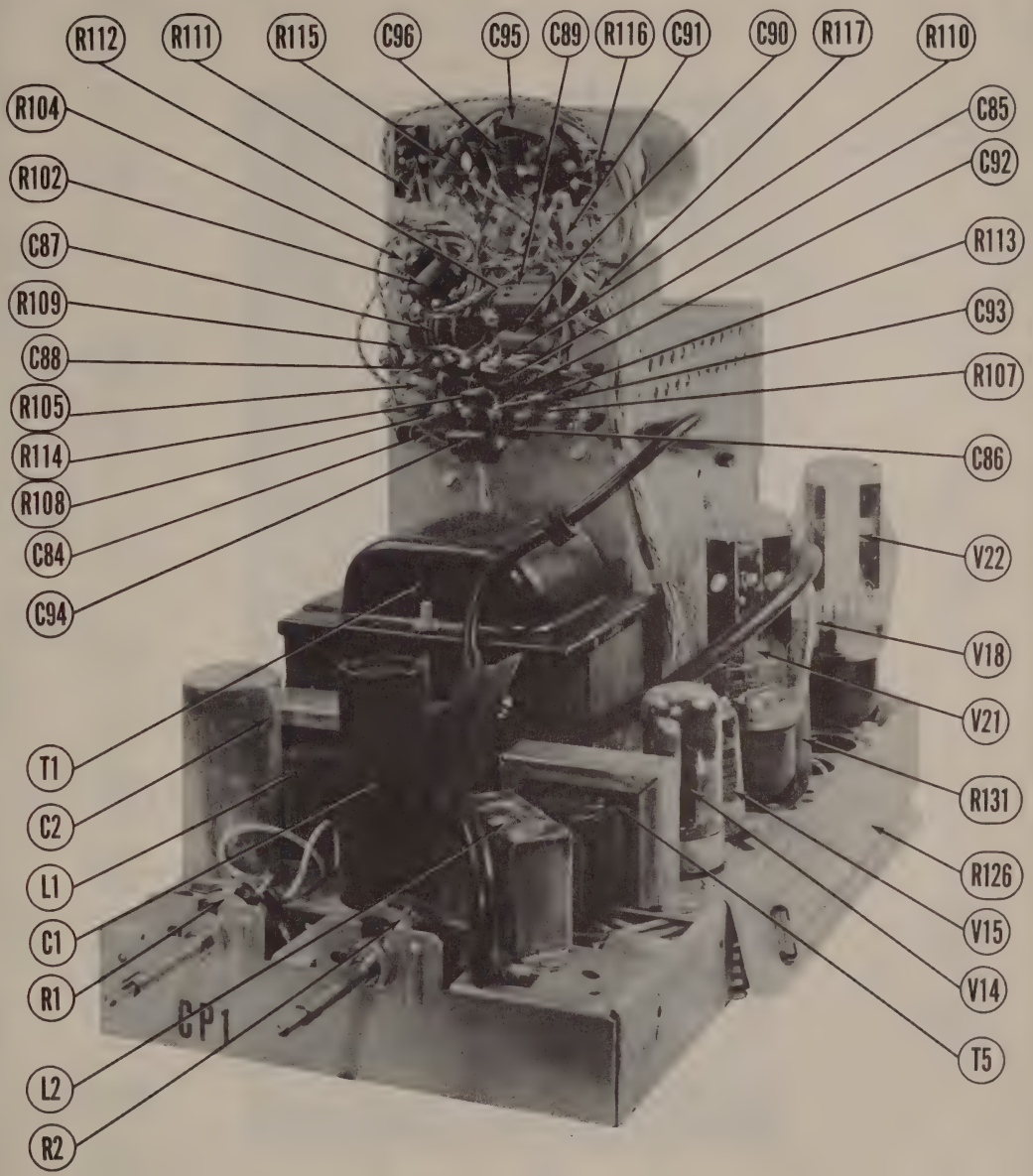
RADIO SCHEMATIC

PHILCO MODELS 51-T1833, 51-T1835, 51-T1838, 51-T1870, 51-T1871, 51-T1872, 51-T1874, L, 51-T1875, 51-T1876

PHILCO MODELS 51-T1833, 51-T1835, 51-T1838, 51-T1870, 51-T1871, 51-T1872, 51-T1874, L, 51-T1875, 51-T1876

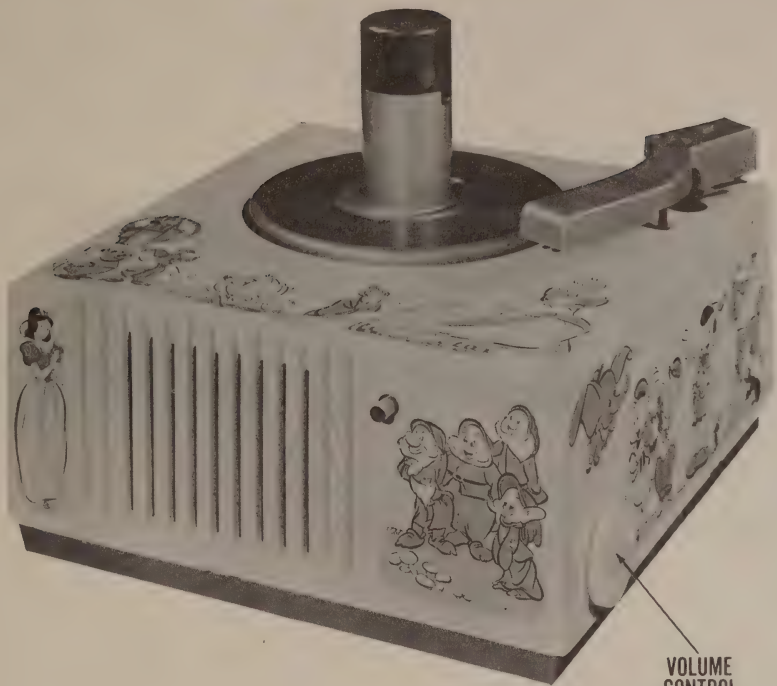


SWEEP CHASSIS-CAPACITOR IDENTIFICATION



SWEEP CHASSIS-TOP VIEW

RCA VICTOR MODELS 45EY1
(Ch. RS-132F), 45EY15 (Ch. RS-132H)



RCA VICTOR MODELS 45EY1
(Ch. RS-132F), 45EY15 (Ch. RS-132H)

TRADE NAME	RCA Victor, Models 45-EY-1 (Ch. RS-132F), 45-EY-15 (Ch. RS-132H)
MANUFACTURER	RCA Victor Div., Radio Corp. of America, Camden, New Jersey
TYPE SET	AC Operated Automatic Record Player with 3 Tube Amplifier
TUBES (THREE)	Types 12AV6 AF Amp., 50B5 Power Output, 35W4 Rectifier
POWER SUPPLY	110-120 Volts AC RATING .25 Amp. @ 117 Volts AC

FOR SERVICE INFORMATION ON RECORD CHANGER SEE RCA MODEL RP168 IN PHOTOFACT SET 72 FOLDER 10 OR RECORD CHANGER MANUAL CM-3.

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		RCA PART No.	STANDARD REPLACEMENT		
V1	AF Amplifier	12AV6	12AV6	7BT	
V2	Power Output	50B5	50B5	7BZ	
V3	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	RCA PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	
C1A	80	150	73520	AFH888D		UP8415		TVL-2442	■ Filter
B	50	150							▲ Filter
C2	.01	200	71923	P488-01	D6-103	PTE4S1	821-01	4TM-S1	Audio Coupling
C3	.0047	600	73920	P688-0047	D6-472	PTE6D5	GP2M-0047	6TM-D47	Audio Coupling
C4	.018	400	58476	P488-02		PTE4S2		4TM-S2	Output Plate
C5	.1	400	73551	P488-1	DF-104	PTE4P1		4TM-P1	Line Isolation

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	RCA PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	
R1A	1 Meg	½	74101	Q13-137	AG-68-4	B-70-S	Volume Control
B	Shaft		Not Req	Not Req	FS-3	Not Req	Attach to R1A per instructions
C	Switch		Not Req	76-1	SWB	Not Req	Attach to R1A per instructions

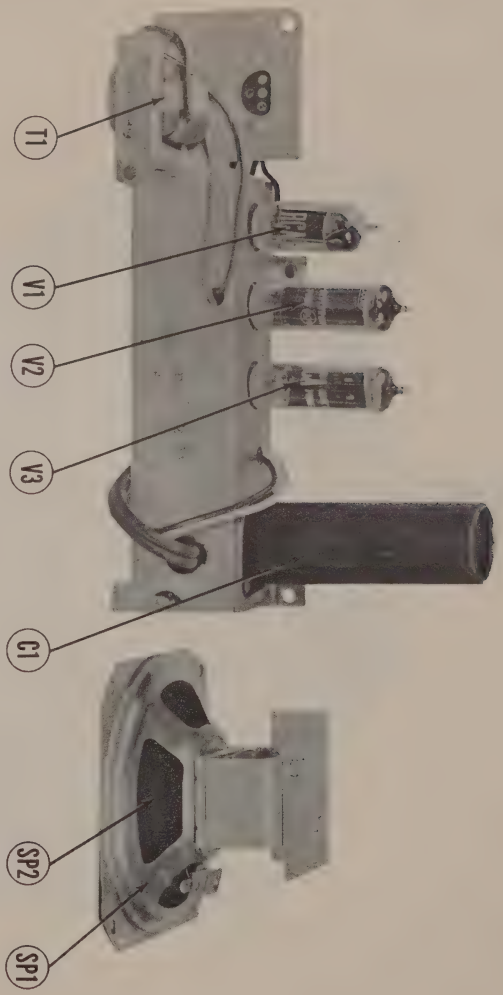
RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	RCA PART No.	IRC PART No.	
R2	4.7Meg	½		BTS-4.7Meg	AF Amp. Grid
R3	270KΩ	½		BTS-270K	AF Amp. Plate
R4	270KΩ	½		BTS-270K	Output Grid
R5	150Ω	½		BTS-150-5%	Output Cathode
R6	2700Ω	½		BTS-2700	Filter
R7	33Ω	½	73237		Surge Limiter
R8	120Ω	5	72314		Filament Dropping -Wire Wound

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		RCA PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T1	2.1KΩ	3.5Ω	240Ω	.8Ω	72535	A-3876 ①	A-3025 ①	R0-2 ①	① Drill one new mounting hole

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			RCA PART No.	JENSEN PART No.	QUAM PART No.	
	FIELD	V. C. IMP.		ST113 ②		② Drill and tap magnet frame to fit original mounting bracket.
SP1	PM	3.5Ω	74165	Model P4-X	4A1 ②	
	CONE DIA.	V. C. DIA.				
SP2	4 1/8"	9/16"				

PHONO CARTRIDGE and NEEDLE

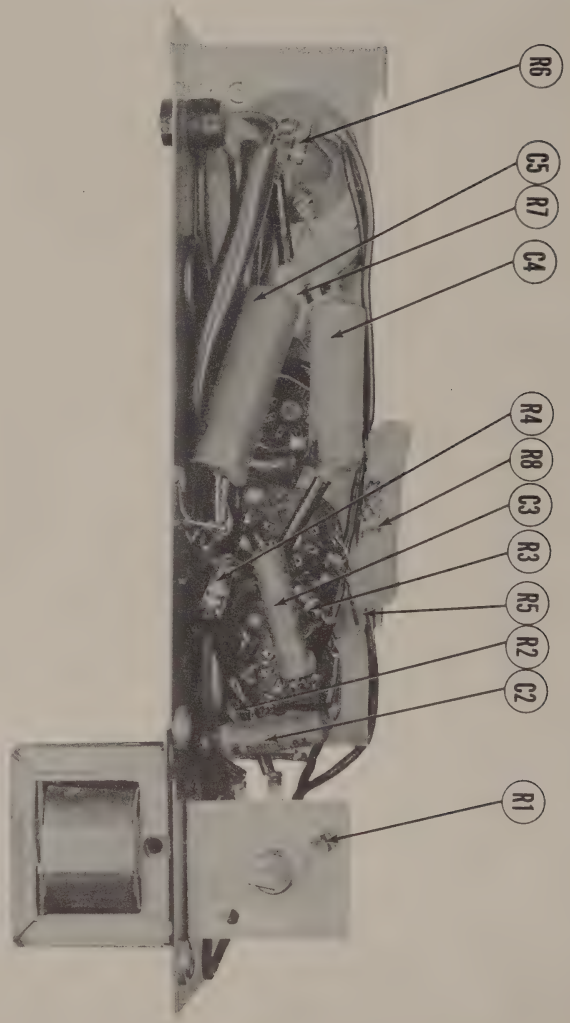
ITEM No.	REPLACEMENT DATA						REMARKS
	RCA PART No.	ASTATIC PART No.		SHURE PART No.		ELECTRO-VOICE PART No.		
		CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	
M1	74067	CAC-J AC-J GC-J	Q-33 A-1 G	W31AR	A53MG	34	0-1 or S-1	

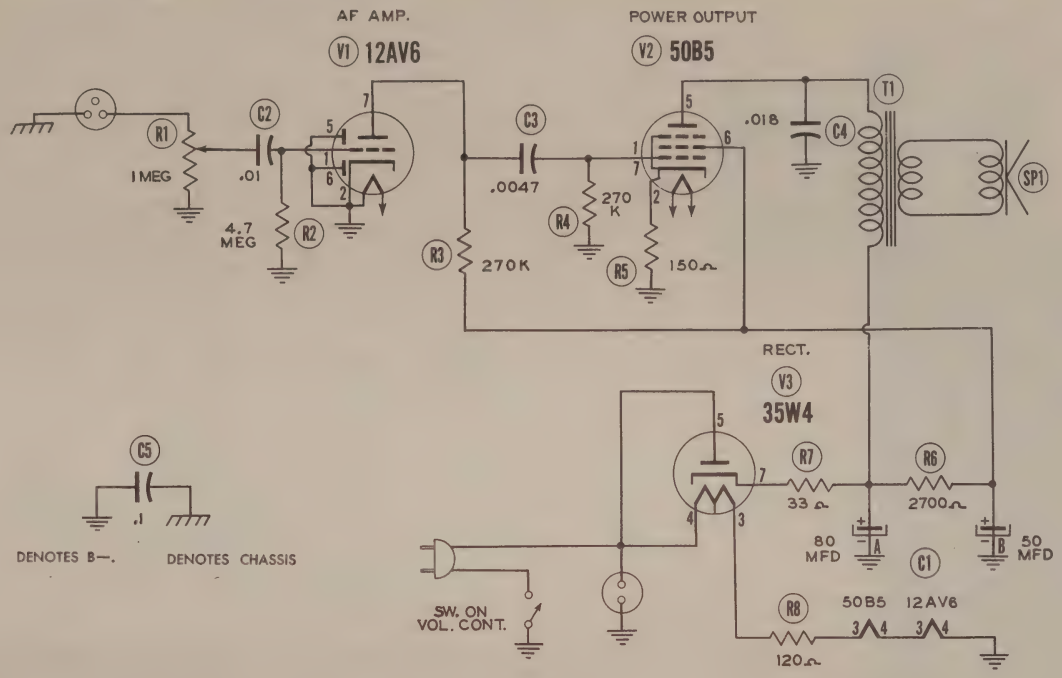
ASTATIC, SHURE, AND ELECTRO-VOICE NEEDLE LISTINGS SHOWN ABOVE ARE SPECIFIED FOR THE RESPECTIVE REPLACEMENT CARTRIDGES LISTED.

MISCELLANEOUS

ITEM No.	PART NAME	RCA PART No.	NOTES
	Cabinet	Y2226	Model 45-EY-1
	Cabinet	Y2295	Model 45-EY-15
	Knob	74666	Model 45-EY-1
	Knob	74667	Model 45-EY-15

CHASSIS—BOTTOM VIEW





VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12AV6	-.5VDC	0V	12VAC	0V	0V	0V	60VDC
V 2	50B5	0V	7.8VDC	65 VAC	12VAC	110VDC	105VDC	0V
V 3	35W4	0V	120VDC	85VAC	117VAC	117VAC	108VAC	120VDC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12AV6	4.7Meg	0Ω	12Ω	0Ω	0Ω	0Ω	†270KΩ
V 2	50B5	270KΩ	150Ω	60Ω	12Ω	†275Ω	†2.7KΩ	270KΩ
V 3	35W4	Inf.	30KΩ	180Ω	215Ω	215Ω	210Ω	30KΩ

† MEASURED FROM PIN 7 OF V3

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135-11

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of + 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

PHOTOFACT* Folder

STROMBERG-CARLSON MODELS
16 Series, 17 Series, 116 Series

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MODEL 17TM

STROMBERG-CARLSON MODELS
16 Series, 17 Series, 116 Series

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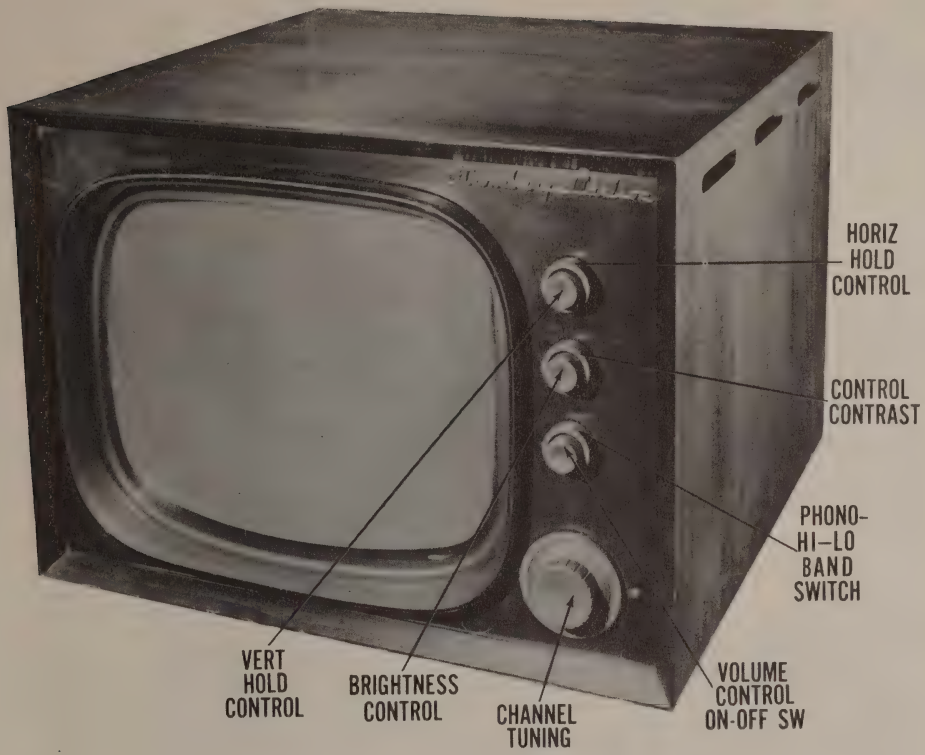
DATE 6-51 SET 135 FOLDER 12



STROMBERG-CARLSON MODELS
16 Series, 17 Series, 116 Series

STROMBERG-CARLSON MODEL 17TM

TRADE NAME	Stromberg-Carlson, Models 16 Series, 17 Series, 116 Series (TV Chassis Only)
MANUFACTURER	Stromberg-Carlson Co., 100 Carlson Rd., Rochester (3), N. Y.
TYPE SET	Televsision Receiver (Some models TV-Radio - Phono Combinations)
TUBES	Twenty Six
POWER SUPPLY	110-120 Volts AC-60 Cycle — RATING 2.3 Amp. @ 117 Volts AC
TUNING RANGE–	Channels 2 thru 13

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MODEL 16RP - RADIO CHASSIS 112037 - SEE PHOTOFACT FOLDER 23 - SET 58
MODELS 17RP AND 116RP - RADIO CHASSIS 112108

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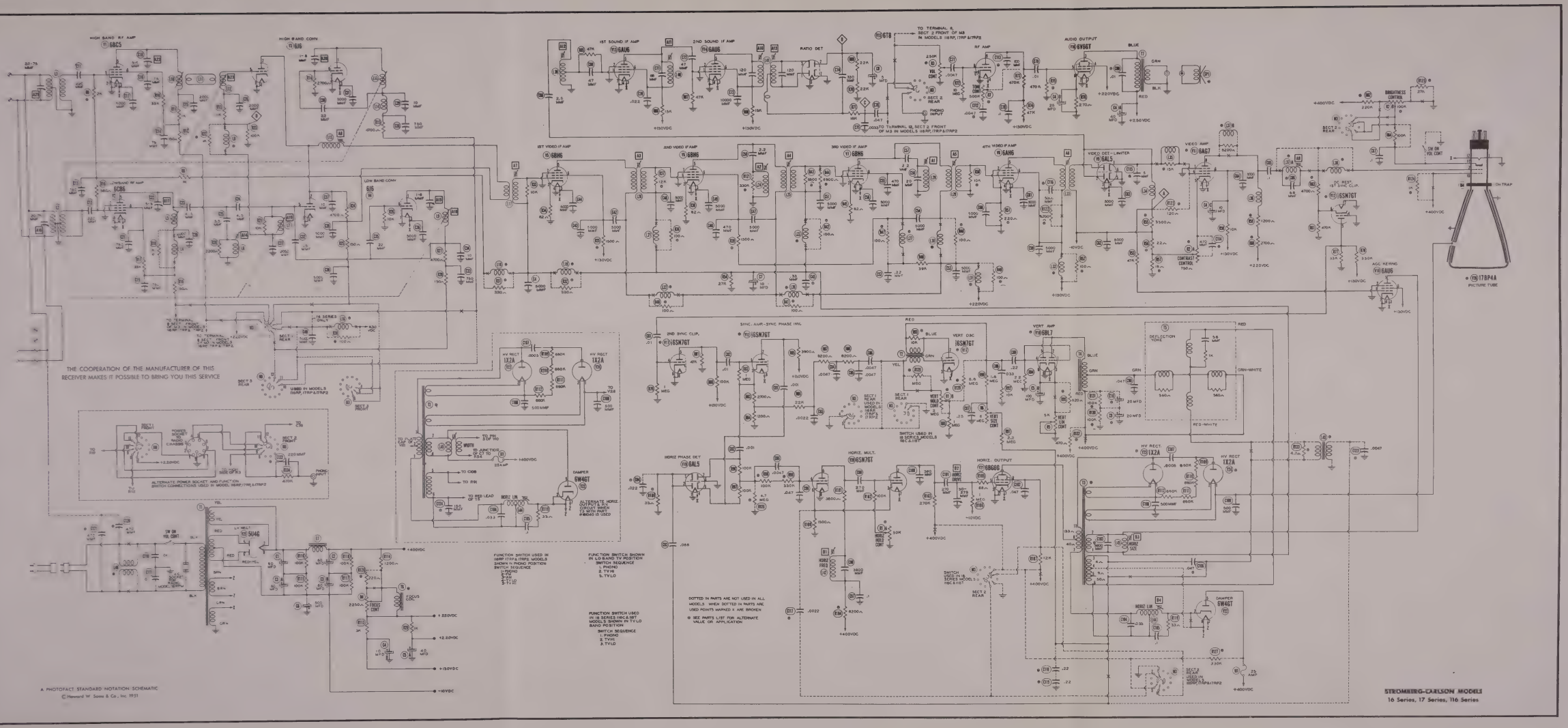
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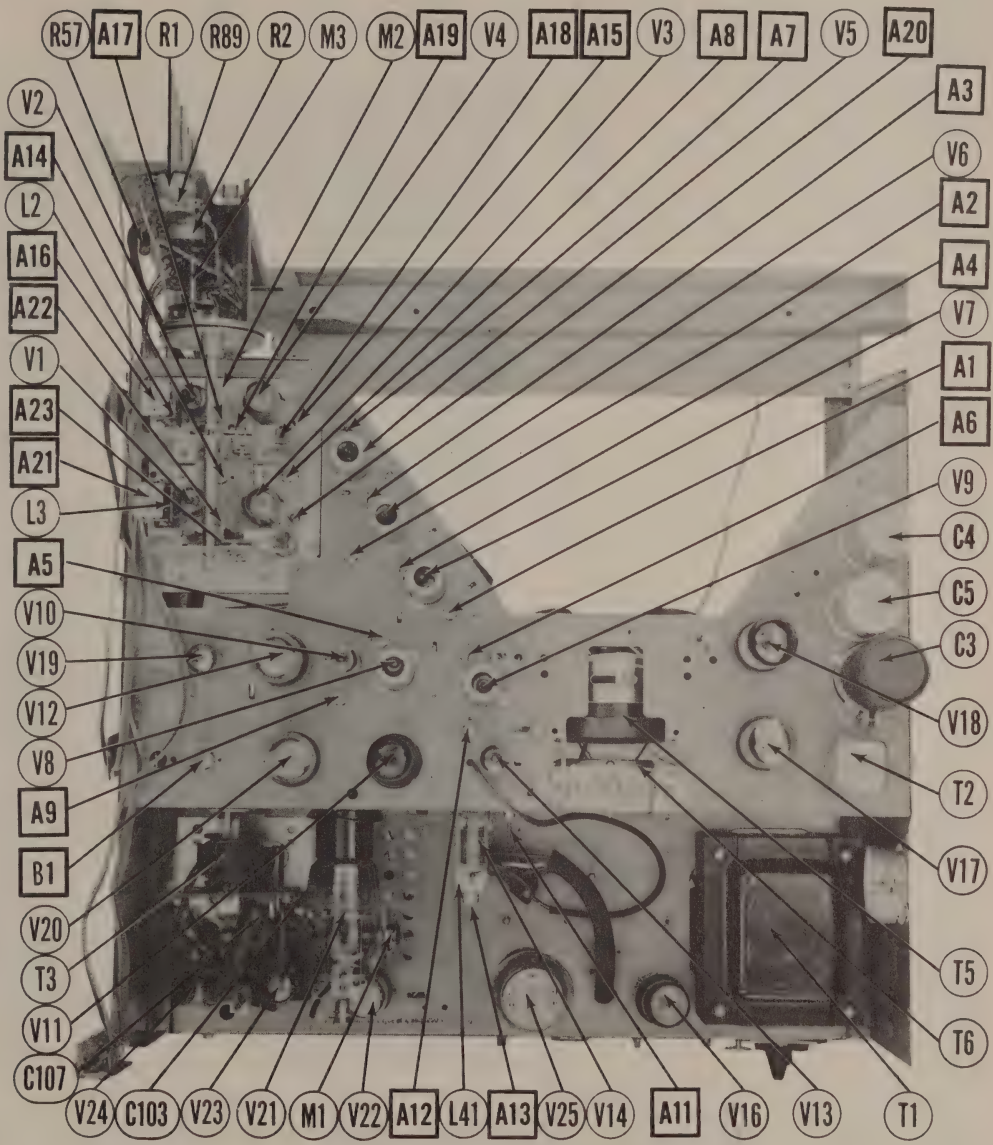
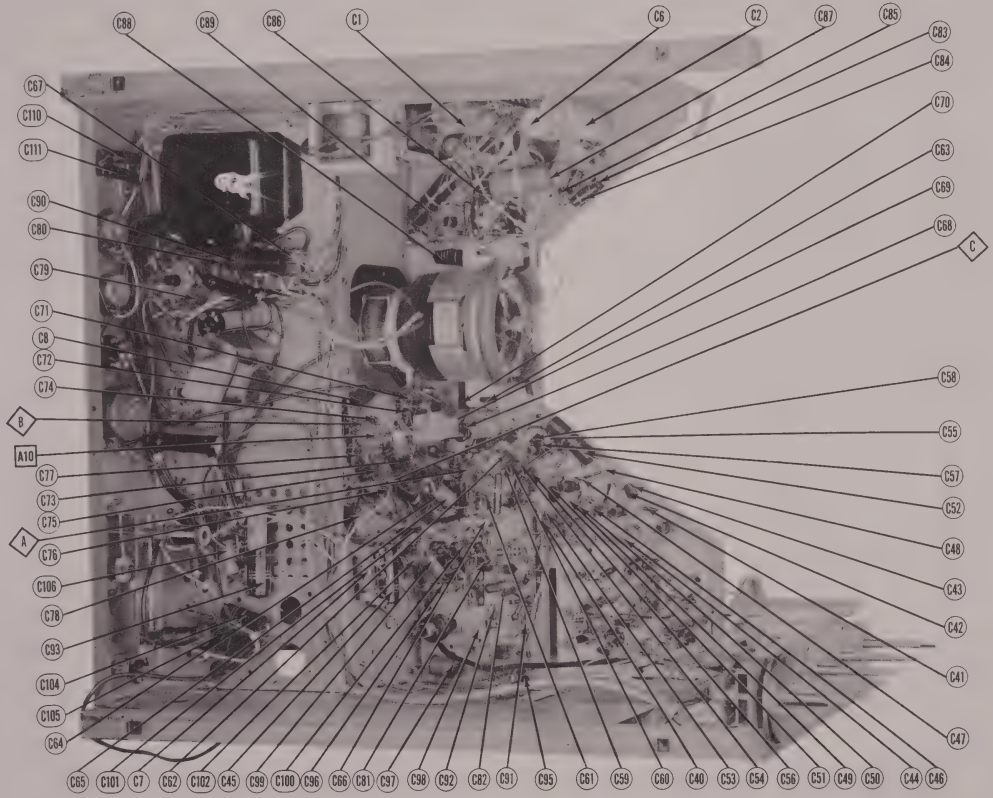
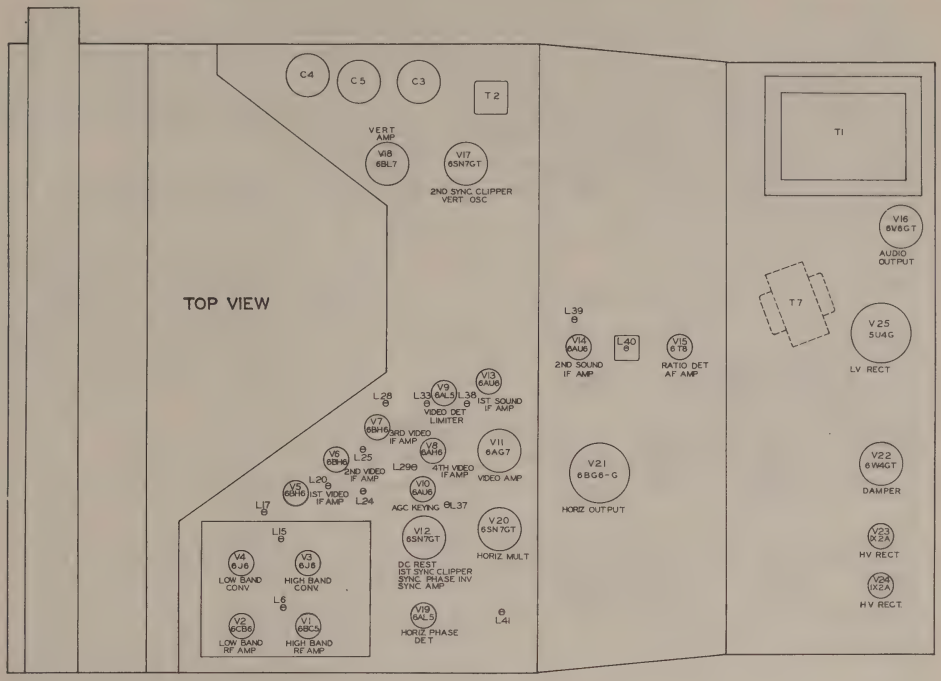
STROMBERG-CARLSON MODELS
16 Series, 17 Series, 116 Series

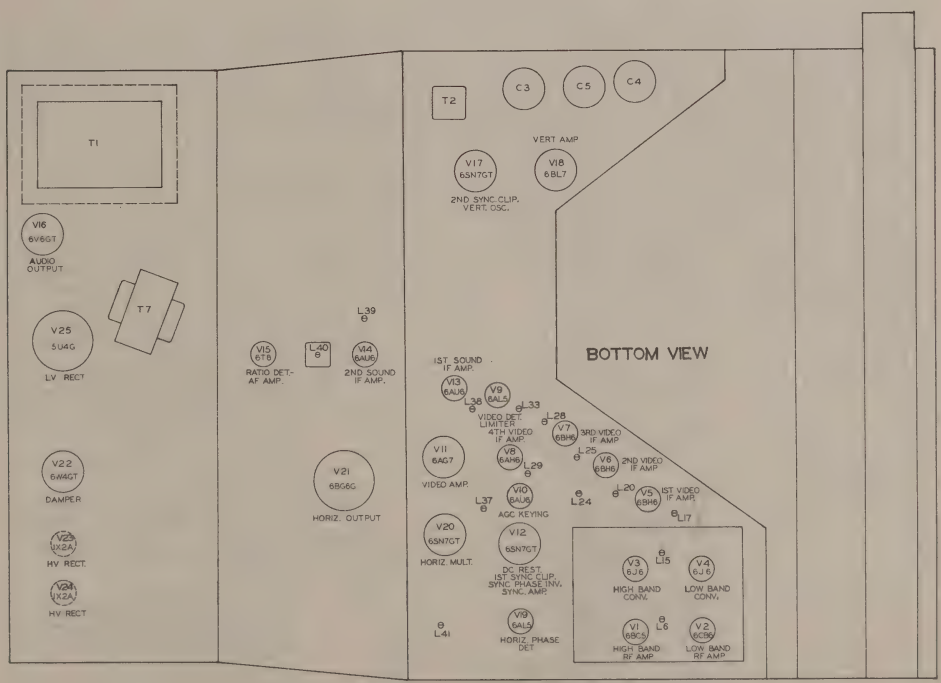


CHASSIS TOP VIEW



CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION





TUBE PLACEMENT CHART

TV ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The end of the high voltage lead should be securely taped and kept away from the chassis. Do not remove the horizontal oscillator to disable the high voltage.

VIDEO IF ALIGNMENT

Turn the band switch to "low band", (clockwise).
Remove the low band converter tube, (V4), and replace it with a 6J6 which has Pin 1 removed, this will disable the local oscillator and prevent the possibility of erroneous indications. Connect the negative lead of a 3 volt battery to the ungrounded lead of C7, connect the positive lead to chassis. Connect a 47KΩ resistor in series with the oscilloscope vertical input.
Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	Figure 1	High side to Pin 1 (grid) of 6BH6, (V5). Low side to chassis.	24.5MC (10MC SWP)	21.9MC	Any	Vert. amp. to Point A. Low side to chassis.	A1	Adjust for MINIMUM marker indication at the 21.9MC point on response curve.
2.	"	"	"	Not used	"	"	A2	Adjust to reduce the "pop up" below 21.9MC. The response should be essentially flat between 21MC and 21.9MC. See figure 3.
3.	"	"	"	22.7MC 26.4MC	"	"	A3, A4 A5, A6	Adjust for responsecurve similar to figure 2. A3 effects the high frequency end of A5 the low frequency end, A4 and A6 the center portion of the response curve.
4.	Direct	High side to an ungrounded tube shield floating over dummy converter tube, (V4). Low side to chassis.	"	22.7MC 22.9MC 26.4MC	"	"	A7, A8	Adjust for response curve similar to figure 4. If necessary retouch A3 thru A6 for proper response.

4.5MC TRAP ADJUSTMENT

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
5.	.005MFD	High side to Point A. Low side to chassis.	Not used	4.5MC (400∿ Mod.)	Any	Vert. amp. to pin 2 of picture tube. Low side to chassis.	A9	Adjust for MINIMUM 400∿ indication on scope.

SOUND IF ALIGNMENT

Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
6.	.005MFD	High side to Point A. Low side to chassis.	4.5MC (450KC SWP)	4.5MC	Any	Vert. amp. to Point ⟨B⟩. Low side to chassis.	A10, A11, A12	Disconnect stabilizer capacitor C8. Adjust for maximum amplitude and symmetry as per figure 5.
7.	"	"	"	"	"	Vert. amp. to Point ⟨C⟩. Low side to chassis.	A13	Reconnect capacitor C8. Adjust A14 so 4.5MC occurs at center of crossover lines as per figure 6. SLIGHTLY retouch A10 for maximum amplitude and straightness of crossover lines.

TUNER ALIGNMENT

Remove the dummy converter tube and replace the original 6J6 in its socket.
The use of two marker generators are required to align the tuner of this receiver. Marker generator No. 1 is connected in parallel with the sweep generator thru a 2 or 3MMF capacitor, (if the sweep generator has a built in marker it will be used for marker #1). The frequency to which Marker #1 is tuned will be indicated in the table by an asterisk (*). Marker generator #2 is connected to an ungrounded tube shield floating over the converter tube of the band being aligned, (V3 for high band, V4 for low band). The frequency to which marker #2 is tuned will be indicated by a dagger (†).
Turn the tuning control until the tuning cores are at the extreme bottom of their travel.
Pre-set the three low band tuning cores so that the bottom edge of the core is even with the bottom edge of the last turn of the coil.
Pre-set the high band RF and oscillator cores so that the bottom end of the slug is 3/16 inch from the bottom edge of the last coil turn. The converter (center coil slug), should be set so the bottom end of the core is even with the bottom edge of the last coil turn.
Position the link between the high band RF and converter coils so the link is even with the bottom edge of the colored vinyl coil covering.
Make two marks on the chassis corresponding to the index marks on the cabinet front.
Replace the tuning knobs and position the calibrated dial so that the index on one side is centered between the 2 and 13 on the scale, and between the 6 and 7 on the opposite side.
Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.
The image rejection trap A14 has been properly set at the factory and should not require adjustment in the field.

LOW BAND ALIGNMENT

Turn the function selector switch to "low band TV" (fourth position CW).

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
8.	Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	85MC (10MC SWP)	*87.75MC †21.9MC	6	Vert. amp. to Point ⟨D⟩. Low side to chassis.	A15	Adjust so markers coincide on response curve.
9.	"	"	"	83.25MC 87.75MC	"	"	A16, A17	Adjust for maximum symmetrical response similar to figure 7.
10.	"	"	57MC (10MC SWP)	*59.75MC †21.9MC	2	"	A18	Adjust tuning control in vicinity of channel 2 until markers coincide. If necessary adjust A18 to obtain proper calibration.
11.	"	"	69MC (10MC SWP)	*71.75MC †21.9MC	4	"		Adjust tuning control until markers coincide.
12.	"	"	"	67.25MC 71.75MC	4	"	A19, A17	Adjust for maximum symmetrical response similar to figure 7.
13.	"	"	85MC (10MC SWP)	*87.25MC †21.9MC	6	"	A15	Adjust tuning control until markers coincide. If necessary retouch A15 to correct calibration.
14.	"	"	"	83.25MC 87.75MC	6	"	A16, A17	Check the channel 6 response and if necessary retouch A16 and A17 for response similar to figure 7.
15.	"	"	79MC (10MC SWP)	*77.25MC *81.75MC †21.9MC	5	"		Tune to each channel by coincidence of RF sound carrier marker and 21.9MC marker. If the response on any channel falls outside the limits of figure 8 make compromise adjustments of A17 and A19 for best overall response.
			69MC (10MC SWP)	*67.25MC *71.75MC †21.9MC	4			
			63MC (10MC SWP)	*61.25MC *65.75MC †21.9MC	3			
			57MC (10MC SWP)	*55.25MC *59.75MC †21.9MC	2			

TV ALIGNMENT INSTRUCTIONS (CONT.)

HIGH BAND ALIGNMENT

Turn the function selector switch to "high band TV" (maximum CW).

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
16.	Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	213MC (10MC SWP)	*215.75MC †21.9MC	13	Vert. amp. to Point (D). Low side to chassis.	A20	Adjust for coincidence of the markers
17.	"	"	"	211.25MC 215.75MC	13	"	A21, A22	Adjust for symmetrical response curve similar to figure 9.
18.	"	"	177MC (10MC SWP)	*179.75MC †21.9MC	7	"		Turn tuning control until markers coincide. If necessary alter the position of the connecting strap at the base of the high band oscillator coil to correct dial calibration.
19.	"	"	"	175.25MC 179.75MC	"	"		Check for response curve similar to figure 9. If necessary adjust the coupling link for proper band width.
20.	"	"	213MC (10MC SWP)	*215.75MC †21.9MC	13	"		Tune for marker coincidence. If necessary retouch A20 to correct dial calibration.
21.	"	"	"	211.25MC 215.75MC	13	"	A21, A22, A23	Check the channel 13 response. If necessary retouch A21 and A22 and adjust A23 for proper response. A23 affects primarily the bandwidth.
22.	"	"	207MC (10MC SWP)	*205.25MC *209.75MC †21.9MC	12	"		Tune to each channel by coincidence of RF sound carrier marker and 21.9MC marker. If the response on any channel falls outside the limits shown in figure 10, make compromise adjustment of A22 and coupling link for best overall response.
			201MC (10MC SWP)	*199.25MC *203.75MC †21.9MC	11			
			195MC (10MC SWP)	*193.25MC *197.75MC †21.9MC	10			
			189MC (10MC SWP)	*187.25MC *191.75MC †21.9MC	9			
			183MC (10MC SWP)	*181.25MC *185.75MC †21.9MC	8			
			177MC (10MC SWP)	*175.25MC *179.75MC †21.9MC	7			

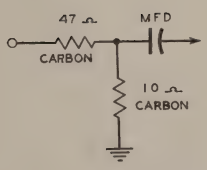


FIG. 1

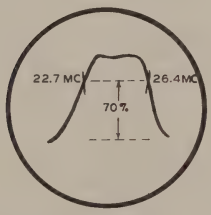


FIG. 2

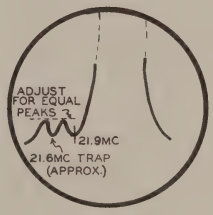


FIG. 3

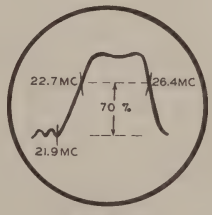


FIG. 4

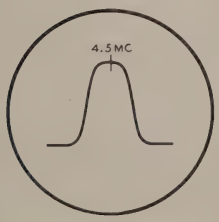


FIG. 5

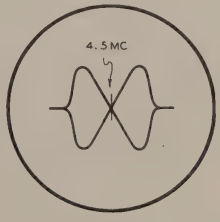


FIG. 6

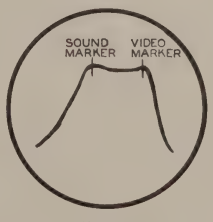


FIG. 7

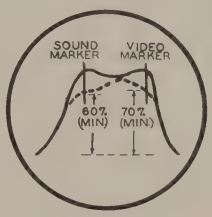


FIG. 8

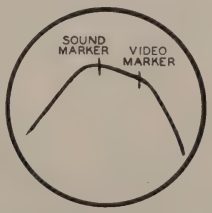


FIG. 9

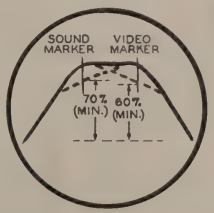


FIG. 10

VOLTAGE AND RESISTANCE MEASUREMENTS

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6BC5	■-.8VDC	0V	6.3VAC	0V	■205VDC	■100VDC	0V		
V 2	6CB6	▲-.6VDC	0V	6.3VAC	0V	▲220VDC	▲155VDC	0V		
V 3	6J6	■60VDC	130VDC	6.3VAC	0V	■-1.4VDC	■§-7.5VDC	0V		
V 4	6J6	▲90VDC	130VDC	6.3VAC	0V	▲-2VDC	▲§-8.9VDC	0V		
V 5	6BH6	-.6VDC	.4VDC	6.3VAC	0V	220VDC	130VDC	0V		
V 6	6BH6	-.6VDC	.4VDC	6.3VAC	0V	215VDC	105VDC	0V		
V 7	6BH6	-.6VDC	.4VDC	6.3VAC	0V	215VDC	105VDC	0V		
V 8	6AH6	0V	1.4VDC	6.3VAC	0V	130VDC	130VDC	1.4VDC		
V 9	6AL5	-8VDC	-8VDC	0V	6.3VAC	0V	0V	-9.8VDC		
V 10	6AU6	-7.8VDC	0V	6.3VAC	0V	-.5VDC	130VDC	0V		
V 11	6AG7	0V	0V	0V	-9.2VDC	-2.4VDC	125VDC	6.3VAC	210VDC	
V 12	6SN7GT	1VDC	110VDC	19VDC	0V	12VDC	2VDC	0V	6.3VAC	
V 13	6AU6	2.2VDC	0V	6.3VAC	0V	60VDC	60VDC	0V		
V 14	6AU6	-.6VDC	0V	6.3VAC	0V	75VDC	70VDC	0V		
V 15	6T8	-.6VDC	-12VDC	-9VDC	6.3VAC	0V	-.8VDC	0V	-.6VDC	50VDC
V 16	6V6GT/G	0V	0V	230VDC	220VDC	0V	525VDC	6.3VAC	11.8VDC	
V 17	6SN7GT	-1.4VDC	25VDC 60VDC	0V	-.6VDC	20VDC	0V	6.3VAC	0V	
V 18	6BL7	.1VDC	380VDC	33VDC	.1VDC	380VDC	33VDC	6.3VAC	0V	
V 19	6AL5	0V	0V	0V	6.3VAC	16VDC	0V	-5.4VDC		
V 20	6SN7GT	-7.4VDC	120VDC	16VDC	1.6VDC	260VDC	16VDC	6.3VAC	0V	
V 21	6BG6G	0V	0V	0V	-27VDC	-27VDC	0V	6.3VAC	320VDC	TOP CAP *
V 22	6W4GT	0V	0V	470VDC	0V	400VDC	0V	470VDC	470VDC	
V 23	1X2A	* DO NOT MEASURE								
V 24	1X2A	* DO NOT MEASURE								
V 25	5U4G	0V	420VDC	58VAC	440VAC	0V	440VAC	0V	420VDC	
V 26	17BP4A	0V	2VDC	PIN 10 400VDC	PIN 11 125VDC	PIN 12 6.3VAC				

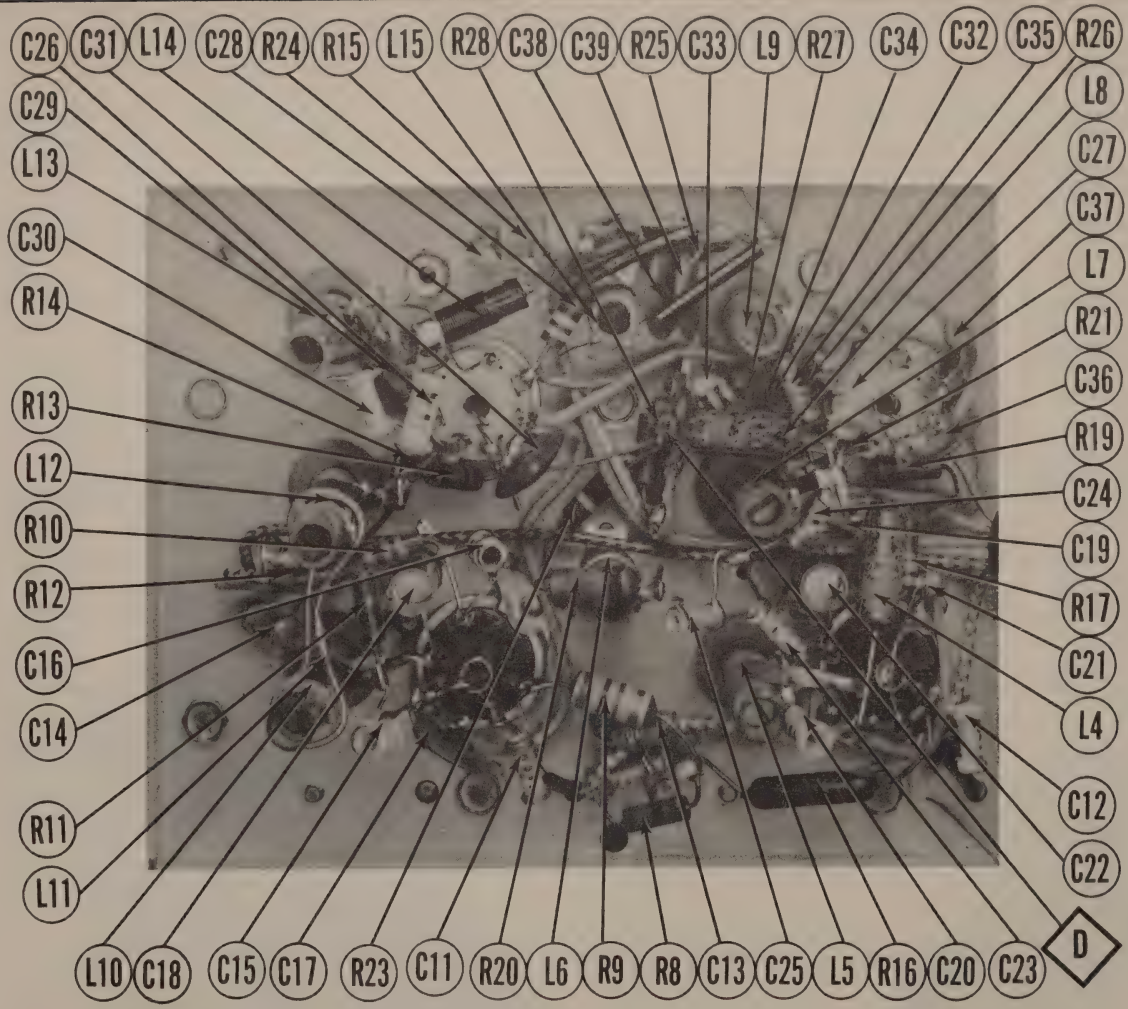
ALL MEASUREMENTS TAKEN WITH PICTURE TUBE REMOVED
TV-PHONO SWITCH IN TV POSITION
▲ MEASURED WITH RANGE SWITCH IN LOW-BAND POSITION
■ MEASURED WITH RANGE SWITCH IN HIGH-BAND POSITION
† MEASURED FROM PIN 8 OF V25
# MEASURED FROM PIN 3 OF V22
§ TAKEN WITH VTVM

RESISTANCE READINGS

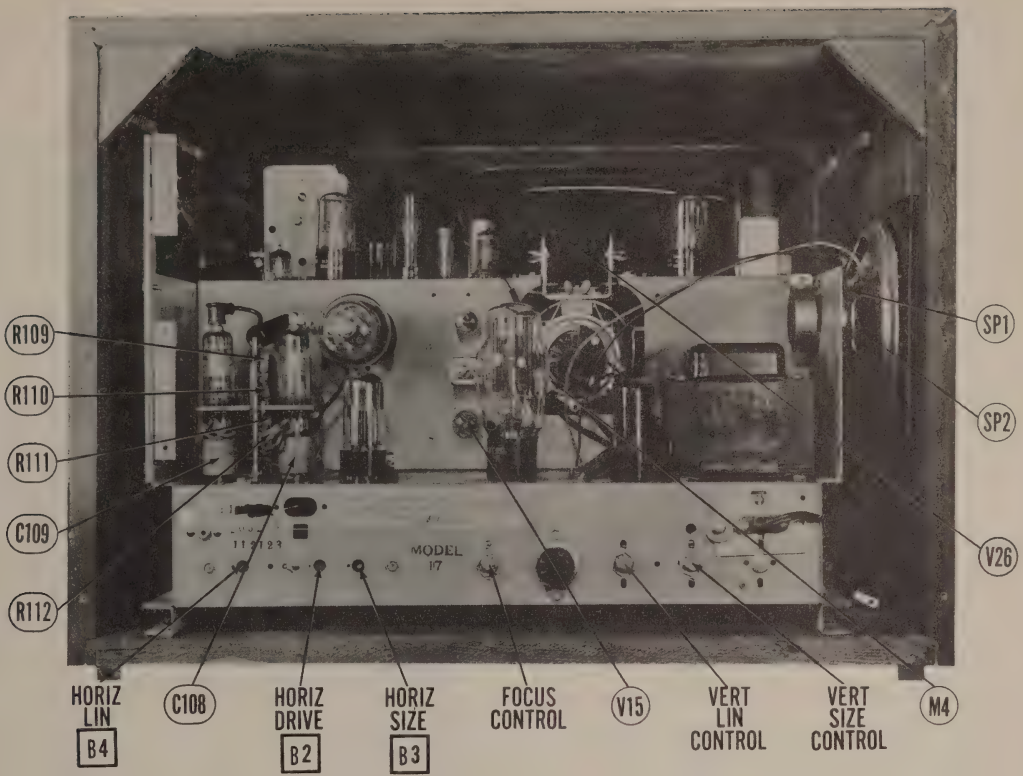
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6BC5	30KΩ	0Ω	.1Ω	0Ω	■†3.3KΩ	■†35KΩ	0Ω		
V 2	6CB6	29KΩ	0Ω	.1Ω	0Ω	▲†2.4KΩ	▲†35KΩ	0Ω		
V 3	6J6	■†9KΩ	†4.3KΩ	.1Ω	0Ω	100KΩ	2.7KΩ	0Ω		
V 4	6J6	▲†8KΩ	†4.3KΩ	.1Ω	0Ω	110KΩ	10KΩ	0Ω		
V 5	6BH6	27KΩ	82Ω	.1Ω	0Ω	†2.2KΩ	†5.7KΩ	0Ω		
V 6	6BH6	27KΩ	82Ω	.1Ω	0Ω	†2.2KΩ	†42KΩ	0Ω		
V 7	6BH6	27KΩ	82Ω	.1Ω	0Ω	†2.2KΩ	†42KΩ	0Ω		
V 8	6AH6	.4Ω	220Ω	.1Ω	0Ω	†4.2KΩ	†4.2KΩ	220Ω		
V 9	6AL5	3.4KΩ	3.4KΩ	0Ω	.1Ω	0Ω	0Ω	31Ω		
V 10	6AU6	50KΩ	0Ω	.1Ω	0Ω	27KΩ	†4.2KΩ	0Ω		
V 11	6AG7	0Ω	0Ω	Inf.	3.4KΩ	770Ω	†14KΩ	.1Ω	†6.2KΩ	
V 12	6SN7GT	1Meg	†8.2KΩ	3.9KΩ	0Ω	33KΩ	470KΩ	0Ω	.1Ω	
V 13	6AU6	47KΩ	0Ω	.1Ω	0Ω	†19KΩ	†19KΩ	0Ω		
V 14	6AU6	47KΩ	0Ω	.1Ω	0Ω	†19KΩ	†19KΩ	0Ω		
V 15	6T8	Inf.	44KΩ	Inf.	.1Ω	0Ω	Inf.	0Ω	10Meg	†520KΩ
V 16	6V6GT/G	0Ω	0Ω	†1.7KΩ	†2.2KΩ	470KΩ	Inf.	.1Ω	270Ω	
V 17	6SN7GT	1Meg	#4Meg #10Meg	0Ω	1Meg	47KΩ	0Ω	.1Ω	0Ω	
V 18	6BL7	2.2Meg	†1.2KΩ	0Ω 5KΩ	2.2Meg	†1.2KΩ	0Ω 5KΩ	.1Ω	0Ω	
V 19	6AL5	33Ω	33Ω	0Ω	.1Ω	Inf.	0Ω	Inf.		
V 20	6SN7GT	150KΩ	†270KΩ	1.5KΩ	Inf.	†14KΩ	1.5KΩ	.1Ω	0Ω	
V 21	6BG6G	0Ω	0Ω	0Ω	Inf.	1Meg	Inf.	.1Ω	†12KΩ	TOP CAP #46Ω
V 22	6W4GT	Inf.	Inf.	Inf.	Inf.	†90Ω	Inf.	#.2Ω	#0Ω	
V 23	1X2A	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf. TOPCAP #180Ω
V 24	1X2A	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf. TOPCAP #0Ω
V 25	5U4G	Inf.	32KΩ	Inf.	80Ω	Inf.	80Ω	Inf.	32KΩ	
V 26	17BP4A	0Ω	475KΩ	PIN 10 †90Ω	PIN 11 200KΩ	PIN 12 .1Ω				

ALL MEASUREMENTS ARE TAKEN WITH PICTURE TUBE REMOVED
TV-PHONO SWITCH IN TV POSITION
▲ MEASURED WITH RANGE SWITCH IN LOW-BAND POSITION
■ MEASURED WITH RANGE SWITCH IN HIGH-BAND POSITION
† MEASURED FROM PIN 8 OF V25
# MEASURED FROM PIN 3 OF V22

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltage measured at 1,000 ohms.
2. Pin numbers are counted in a clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. Front panels controls set at minimum.
6. Where readings may vary according to the setting of the service controls, both minimum and maximum readings are given.



RF TUNER-BOTTOM VIEW



CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station preferably a test pattern.

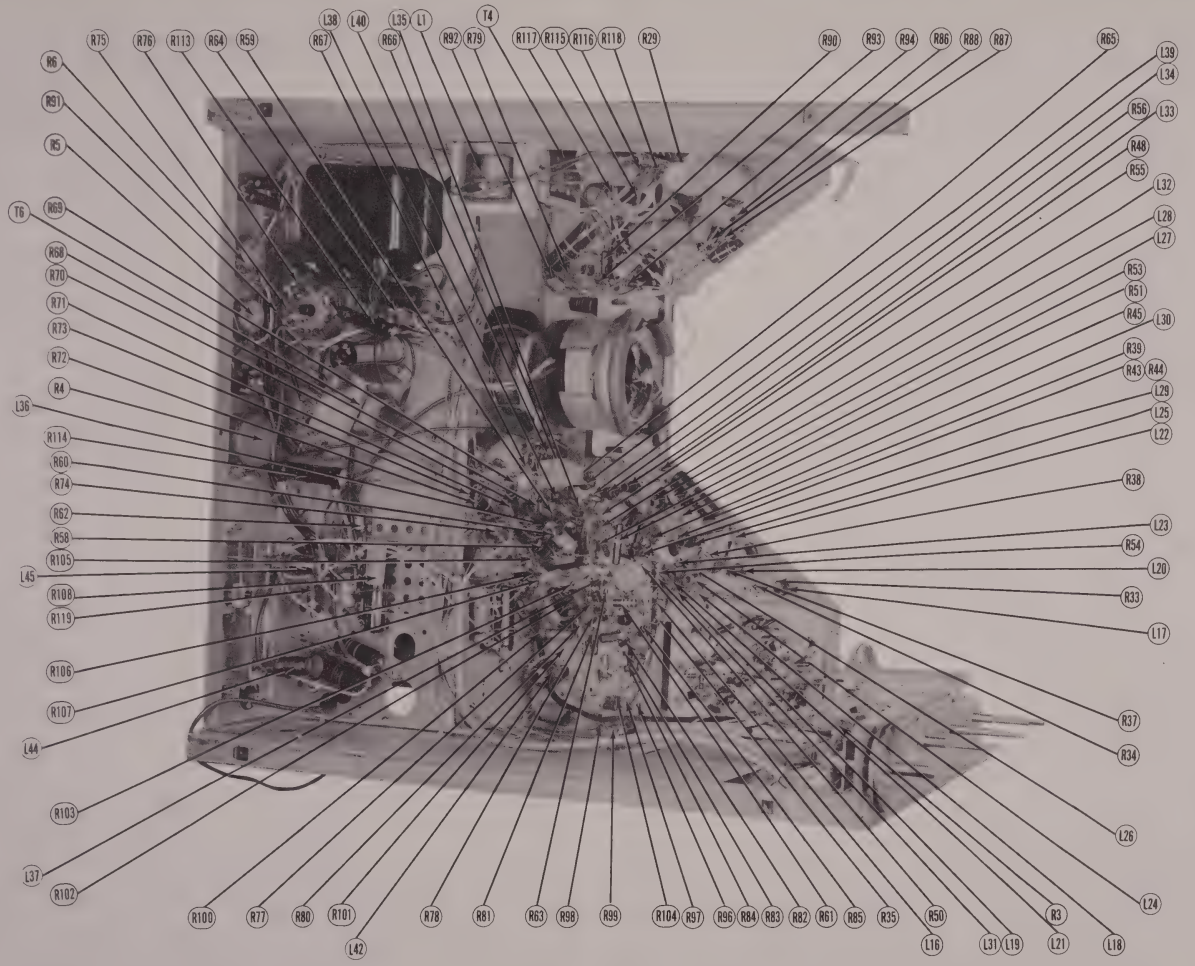
Turn the horizontal hold control to the mid-position of its range.

Adjust the horizontal frequency slug, (B1), until the picture synchronizes horizontally.

Adjust the horizontal drive trimmer, (B2), counter-clockwise as far as possible without crowding or vertical lines appearing in the picture.

Adjust the horizontal size slug, (B3), until the picture fills the mask horizontally.

Adjust the horizontal linearity slug, (B4), until the picture is symmetrical from left to right. Slight readjustment of B2 may be required for optimum linearity.



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	NOTES
		STROM-CARL PART No.	STANDARD REPLACEMENT		
V1	High band RF Amp.	6BC5	6BC5	7BD	
V2	Low band RF Amp.	6CB6	6CB6	6CK	
V3	High band Conv.	6J6	6J6	7BF	
V4	Low band Conv.	6J6	6J6	7BF	
V5	1st. Video IF Amp.	6BH6	6BH6	7CM	
V6	2nd. Video IF Amp.	6BH6	6BH6	7CM	
V7	3rd. Video IF Amp.	6BH6	6BH6	7CM	
V8	4th. Video IF Amp.	6AH6	6AH6	7CM	
V9	Video Detector-Limiter	6AL5	6AL5	6BT	
V10	AGC Keying	6AU6	6AU6	7BK	
V11A	Video Amplifier	6AG7	6AG7	8Y	
B	Video Amplifier	6AC7	6AC7	8N	
V12A	DC Restorer-1st. Sync. Clipper - Sync. Phase-Inv.-Sync. Clipper	6SN7GT	6SN7GT	8BD	
B	DC Restorer-1st. Sync. Clipper - Sync. Phase Inv.-Sync. Amplifier	12AU7	12AU7	9A	
V13	1st. Sound IF Amp.	6AU6	6AU6	7BK	
V14	2nd. Sound IF Amp.	6AU6	6AU6	7BK	
V15	Ratio Detector-AF Amplifier	6T8	6T8	9E	
V16	Audio Output	6V6GT	6V6GT	7AC	
V17A	2nd. Sync. Clipper Vert. Osillator	6SN7GT	6SN7GT	8BD	
B	2nd. Sync. Clipper Vert. Oscillator	12AU7	12AU7	9A	
V18A	Vert. Amplifier	6BL7	6BL7	8BD	
B	Vert. Amplifier	12AU7	12AU7	9A	
V19	Horiz. Phase Det.	6AL5	6AL5	6BT	
V20	Horiz. Multivib.	6SN7GT	6SN7GT	8BD	
V21	Horiz. Output	6BG6G	6BG6G	5BT	
V22	Damper	6W4GT	6W4GT	4CG	
V23A	HV Rectifier	1X2A	1X2A	7CB	
B	HV Rectifier	1X2	1X2	7CB	
V24A	HV Rectifier	1X2A	1X2A	7CB	
B	HV Rectifier	1X2	1X2	7CB	
V25	LV Rectifier	5U4G	5U4G	5T	
V26A	Picture Tube	17BP4A	17BP4A	12D	
B	Picture Tube	17BP4	17BP4	12D	
C	Picture Tube	17AP4	17AP4	12D	
D	Picture Tube	16GP4	16GP4	12D	
E	Picture Tube	16RP4	16RP4	12D	
F	Picture Tube	16KP4	16KP4	12D	
G	Picture Tube	16TP4	16TP4	12D	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	STROM-CARL PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	
C1	80	300	111067	PRS450/40-40		UP8030		TVA-1716	Filter
C2	80	300	111067	PRS450/40-40		UP8030		TVA-1716	Filter
C3A	80	300	111064	AFH1616G		UP8830		TVL-2585	▲ Filter
B	80	300							■ Filter
C4A	40	450	111065	AFH832J5A		UPT42245C		TVL-4729	▲ Filter
B	10	450							■ Decoupling
C	10	450							▲ V. Amp. Screen Output Cathode
D	25	25							
C5A	40	450	111083	AFH8J		UPT4145 - V10		TVL-1725 / TVA-1310	▲ Filter / ▲ Vert. Output Cathode
B	100	50		PRS50/100					
C6	500	12	111082	PRS12/500		BRH125A		TVA-1132	Filter
C7	10	25	111084	PRS25/10		BR102A		TVA-1204	AGC Filter
C8	5	50	111030	PRS150/4		BR550		TVA-1303	STabilizing Cap.
C9	20	300	111085						Vert. Output Dec. §
C10	20	300	111085						Vert. Output Dec. §
C11	220		110462	SI220	D6-221		GP2K-221	19C13	RF Coupling
C12	220		110462	SI220	D6-221		GP2K-221	19C13	RF Coupling
C13	750		110654	SI750	D6-751		GP2L-751	19C1	AGC Filter
C14	75		110483	SI75	D6-750		GP2K-750	19C11	HB RF Amp. Dec.
C15	2000		110652	SI2000	D6-202		GP2-333-202	29C2	HB RF Amp. Plate Dec.
C16	75		110483	SI175	D6-750		GP1K-750	19C11	HB RF Amp. Screen
C17	5000		110586	BPD-005	DD-502		811-005	29C1	HB RF Amp. Fil.
C18	.5-5		110035				532-08-0R5		Variable Trimmer
C19	750		110654	SI750	D6-751		GP2L-751	19C1	LB RF Amp. Dec.
C20	2000		110652	SI2000	D6-202		GP2-333-202	29C2	LB RF Amp. Plate Dec.
C21	750		110654	SI750	D6-751		GP2L-751	19C1	LB RF Amp. Screen
C22	.5-5		110035				532-08-0R5		Variable Trimmer
C23	4.5		110667						RF Coupling
C24	4.5		110667						RF Coupling
C25	5.5		110655						Fixed Trimmer
C26	2000		110652	SI2000	D6-202		GP2-333-202	29C2	HB Conv. Grid Filter
C27	2000		110652	SI2000	D6-202		GP2-333-202	29C2	HB Conv. Grid Filter
C28	750		110654	SI750	D6-751		GP2L-751	19C1	HB Osc. Dec.
C29	10		110656	SI10N750	TCN-10		N750K-100	19C4	Fixed Trimmer
C30	22		110653	SI22	D6-220		GP1K-22	19C23	HB Osc. Grid Cap.
C31	5000		110586	BPD-005	DD-502		811-005	29C1	HB Conv. Fil.
C32	1.5		110438	SI1.5NP0	TCZ-1.5		NP0K-1R5		Osc. Coupling
C33	750		110654	SI750	D6-751		GP2L-751	19C1	LB Osc. Dec.
C34	10		110656	SI10N750	TCN-10		N750K-100	19C4	Osc. Feedback
C35	22		110653	SI22	D6-220		GP1K-220	19C23	LB Osc. Grid Cap.
C36	5000		110586	BPD-005	DD-502		811-005	29C1	LB Converter Fil.
C37	10		110656	SI10N750	TCN-10		N750K-100	19C4	Fixed Trimmer
C38	5000		110586	BPD-005	DD-502		811-005	29C1	RF Bypass
C39	5000		110586	BPD-005	DD-502		811-005	29C1	Conv. Plate Dec.
C40	5000		110586	BPD-005	DD-502		811-005	29C1	RF Bypass
C41	5000		110586	BPD-005	DD-502	1D5D5	811-005	29C1	AGC Filter
C42	5000		110586	BPD-005	DD-502	1D5D5	811-005	29C1	1st. V. IF Plate Dec.
C43	5000		110586	BPD-005	DD-502	1D5D5	811-005	29C1	1st. V. IF Screen
C44	5000		110586	BPD-005	DD-502	1D5D5	811-005	29C1	1st. V. IF Fil.
C45	.33	200		P288-33		GT2P5		2TM-P47	AGC Filter *

PARTS LIST AND DESCRIPTIONS (Continued)

CAPACITORS (CONT.)

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA STROM-CARL PART No.	ARROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C46	5000		110586	BPD-005	DD-502	1DSD5	811-005	29C1	AGC Filter
C47	5000		110586	BPD-005	DD-502	1DSD5	811-005	29C1	2nd. V. IF Plate De-c.
C48	470			3H470	D6-471	5WS7S	GP3K-471	19C15	2nd. V. IF Screen
C49	5000		110586	BPD-005	DD-502	1DSD5	811-005	29C1	2nd. V. IF Fil.
C50	3.3		110439		TCZ-3.3				IF Coupling
C51	5000		110586	BPD-005	DD-502	1DSD5	811-005	29C1	AGC Filter
C52	.33		P488-33		GT4P25			47M-P33	RF Bypass
C53	5000		110586	BPD-005	DD-502	1DSD5	811-005	29C1	RF Bypass
C54	5000		110586	BPD-005	DD-502	1DSD5	811-005	29C1	3rd. V. IF Plate Dec.
C55	470		110456	3H470	D6-471	5WS7S	GP3K-471	19C15	3rd. V. IF Screen
C56	5000		110586	BPD-005	DD-502	1DSD5	811-005	29C1	3rd. V. IF Fil.
C57	3.3		110438		TCZ-3.2				IF Coupling
C58	30		110439	S2GNP0	TCZ-30		N90K-300		Fixed Trimmer
C59	5000		110586	BPD-005	DD-502	1DSD5	811-005	29C1	4th. V. IF Dec.
C60	5000		110586	BPD-005	DD-502	1DSD5	811-005	29C1	4th. V. IF Cathode
C61	5000		110586	BPD-005	DD-502	1DSD5	811-005	29C1	4th. V. IF Fil.
C62	5000		110586	BPD-005	DD-502	1DSD5	811-005	29C1	RF Bypass
C63	5000		110586	BPD-005	DD-502	1DSD5	811-005	29C1	V. Det.-Limiter Fil.
C64	5000		110586	BPD-005	DD-502	1DSD5	811-005	29C1	V. Amp. Screen
C65	.1	400	110546	P488-1	DF-104		PTE4P1		Video Coupling
C66	.1	400	110546	P488-1	DF-104		PTE4P1		Fixed Trimmer †
C67	68		110459		D6-680	5RSQ7	GP3K-680	19C10	Pic. Tube Cathode
C68	1	400	110546	P488-1	DF-104		PTE4P1	47M-P1	S. IF Coupling
C69	2.5		110484		TCZ-2.5				S. IF Coupling
C70	47		110458	3H47	D6-470	5WSQ5	GP3K-470	19C25	Fixed Trimmer
C71	.022	400	110543	P488-022	DF-203	PTE4S3		47M-S22	1st. S. IF Decoupling
C72	80		110459		D6-680	5RSQ7	GP3K-680	19C10	Fixed Trimmer
C73	47		110458	3H47	D6-470	5WSQ5	GP3K-470	19C25	S. IF Coupling
C74	10000		110572	BPD-01	DD-103	1DSD5	811-01	29C1	2nd. S. IF Decoupling
C75	330		110454	S1330	D6-331	5WST3	GP3-333-333	19C14	Diode Load Cap.
C76	.0033	400	110537	P488-.0033	D6-332	PTE4D3		47M-D33	De-emphasis
C77	.047	300	110560	P588-047	DF-503	PTE4S5		2TM-S47	Audio Coupling
C78	.0047	400	110538	P488-0047	D6-472	PTE4D5	GP3-333-472	47M-D47	Audio Coupling
C79	.1	400	110546	P488-1	DF-104		PTE4P1	47M-P1	A.F. Amp. Decoupling
C80	.01	400	110540	P488-01	D6-103		PTE4S1	82L-01	Audio Coupling
C81	.01	600	110555	P688-01	D6-103		PTE6S1	82L-01	Output Plate †
C82	.01	400	110540	P488-01	D6-103		PTE4S1	82L-01	Sync. Coupling
C83	.01	400	110540	P488-01	D6-103		PTE4S1	82L-01	Sync. Coupling
C84	.0022	600	110538	P688-0022	D6-222		PTE6D3	GP3-333-222	Integrator Net
C85	.0047	400	110538	P488-0047	D6-472		PTE4D5	GP3-333-472	47M-D47 Integrator Net
C86	.0047	400	110538	P488-0047	D6-472		PTE4D5	GP3-333-472	47M-D47 Integrator Net
C87	.0047	600	110538	P688-0047	D6-472		PTE6D5	GP3-333-472	47M-D47 Integrator Net
C88	.0047	400	110538	P488-0047	D6-472		PTE4D5	GP3-333-472	47M-D47 Vert. Osc. Grid
C89	.25	600	110579	684-35			GT6P25		47M-P25 Vert. Osc. Dec.
C90	.033	600	110558	P688-033			PTE6S3		Vert. Discharge
C91	.22	400	110549	P488-22			GT4P25		47M-P22 Vert. Sweep Coupling
C92	.047	1000	110573	P1088-047			GT8S5		MB-S5 Fixed Trimmer
C93	.01	600	110554	P688-01	D6-102		PTE6D1	GP2L-102	82L-01 Hor. Sync. Coupling
C94	.001	600	110634	P688-001	D6-102		PTE6D1	GP2L-102	57M-D1 Hor. Sync. Coupling
C95	.068	1000		P1088-068					AGC Network
C96	.022	600	110542	P688-022	DF-203		PTE6S3		47M-S22 AFC Filter †
C97	.0047	400	110538	P488-0047	D6-472		PTE4D5	GP3-333-472	57M-D47 AFC Filter
C98	.047	300	110560	P588-047	DF-503		PTE4S5		47M-S47 AFC Filter
C99	.1	600	110561	P688-1	DF-104		PTE6P1		47M-P1 Hor. MV Decoupling
C100	3900	500	110573	1664-004			1DSD54		MB-54 Fixed Trimmer
C101	270	500	110389	1468-0003	D6-271		5WS73	GP3K-271	1FM-S3 Hor. MV. Feedback
C102	330	500	110318	1468-0004	D6-331		5WS74	GP3K-391	1FM-S4 Hor. Discharge
C103	270	500	110389	1468-00025	D6-271		5WST25	GP3K-271	1FM-S25 Hor. Sweep Coupling
C104	.047	400	110544	P488-047	DF-503		PTE4S5		47M-S47 Hor. Output Screen
C105	3900	500	110573	1664-004			1DSD54		MB-54 Fixed Trimmer ♦
C106	.033	600	110558	P688-033			PTE6S3		47M-S3 Damper Filter
C107	.1	600	110561	P688-1			PTE6P1		47M-P1 Damper Filter
C108	.047	400	110544	P488-047	DF-503		PTE4S5		47M-S47 Hor. Sweep Coupling ♦
C109	5000	20000	110580	P10088-0005			PTW10T5		TVM-35i Voltage Doubler Cap.
C110	500	20000	110680	HV20A	TV1-502			41G-501	H. V. Filter
C111	500	20000	110680	HV20A	TV1-502			41G-501	H. V. Filter
C112	.01	1000	110568	P1088-01			PTE18S1		MB-S1 Line Filter
C113	.01	1000	110568	P1088-01			PTE18S1		MB-S1 Line Filter
C114	.0047	600	110538	P688-0047	D6-472		PTE6D5	GP3-333-472	57M-D47 Tone Comp. †
C115	100		110451	S2G00	D6-101	5WS71	GP3K-101	19C6	A.F. Amp. Plate †
C116	470		110484	S1470	D6-471	5WS7S	GP3K-471	19C15	V. Amp. Cathode †
C117	15		110598	3I5	TCZ-4.7	5WS7S	GP3K-050	MS-55	V. Diode Filter †
C118	5000		110586	BPD-005	DD-502	1DSD5	811-005	29C1	4th. V. IF Plate Dec. †
C119	.0022	600	110551	P688-0022	D6-222	PTE6D2	GP3-333-222	57M-D22	Bypass **
C120	.22	400	110548	P488-22			GT4P25		47M-P22 Decoupling †
C121	.22	400	110548	P488-22			GT4P25		47M-P22 Decoupling †
C122	470		110464	S1470	D6-471	5WS7S	GP3K-471	19C15	Ant. Coupling † †
C123	470		110464	S1470	D6-471	5WS7S	GP2K-471	19C15	Ant. Coupling † †
C124	220		110462	S2220	D6-221	5WS72S	GP2K-221	19C13	Tone Comp. ††
C123	.0047	600	110530	P688-0047	D6-472	PTE6D5	GP3-333-472	57M-D47	Fixed Trimmer † §
C124	150	3000							Damper Filter §

* Some models use .47MFD in this application and some models do not use this capacitor.
** Not used in series 16.
§ Some models use .0047MFD in this application.
† Not used in all models.
♦ Some models use 7500MMF in this application.
Some models use .22MFD in this application.
†† Used only in series 16 and 116 models.
** Used only in series 16 and 116 models. Series 116 uses .1MFD in this application.

CONTROLS

ITEM No.	RATING RESIST-ANCE	WATTS	REPLACEMENT DATA Strom-Carl. PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	50KΩ		145110 ■	Concentrikit			Horizontal Hold Control - Front
B	2MEG			B11-133 #			Vertical Hold Control - Rear
C	Shaft End			B11-139 #	RTV-31		Attach Per Instruction in "Concentrikit"
				E-202 #			
R2A	750Ω			Concentrikit			Contrast Control - Front
B	100KΩ		145113 ▲	B11-108 #	RTV-14E		Brightness Control - Rear
C	Shaft End			E-202 #			Attach Per Instructions in "Concentrikit"
R3A	250KΩ		145112 ■	Q13-130	AG-84-Z	B-51-S ▲	Volume Control
B	Shaft		Not req.	RQ	RS-2 ▲	Not req.	Attach to R3A Per Instructions
C	Switch		Not req.	7E-1	SWB	Not req.	Attach to R3A Per Instructions
R4	2250	4	145087		RTV-9	SVP-387	Focus Control - Wire Wound

CONTROLS (CONT.)

ITEM No.	RATING RESIST-ANCE	WATTS	REPLACEMENT DATA Strom-Carl. PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R5A	5000		145079	QU-114	AG-19-S	AN-10	Vertical Linearity Control
B	Shaft		Not req.	Not req.	FKS-1/4	AK-1	Attach to R5A Per Instructions
R6A	6Meg		145100		AM-86-S	AN-87	Vertical Size Control
B	Shaft		Not req.		FKS-1/4	AK-1	Attach to R6A Per Instructions
R7	500KΩ		145107 ● *				Tone Control - See Note 1

* 116 series receivers use control with part number 145120.
■ 16 series receivers use control with part number 145102.
Additional parts to be used in "Concentrikit".
▲ Fashion shaft to duplicate original.
● 16 series receivers use a dual volume and contrast control with part number 145085: the brightness control mounts on the rear of high-low ohm SW. Part number 145108.
Note 1. Not used in 17 series receivers.

RESISTORS

ITEM No.	RATING RESISTANCE	WATTS	REPLACEMENT DATA STROM-CARL PART No.	IRC PART No.	IDENTIFICATION CODES ALL RESISTORS ±10% UNLESS OTHERWISE SPECIFIED
R8	10000Ω 20%	1	1491GS	BTS-1000	AGC Network
R9	20000Ω 5%	1	1496GS		High-Band RF Amp. Grid - See Note 4
R10	33KΩ 10%	1	1491D	BTS-33K	High-Band RF Amp. Screen
R11	10000Ω 20%	1	1491GS	BTS-1000	High-Band RF Amp. Plate Decoupling
R12	15000Ω 20%	1	1496GS	BTS-150	High-Band RF Amp. Decoupling
R13	10000Ω 20%	1	1491GS	BTS-1000	High-Band Converter Grid
R14	27000Ω 20%	1	2316S	BTS-2700	High-Band Oscillator Grid
R15	47000Ω 10%	1	1491GS	BTS-4700	High-Band Oscillator Plate
R16	560Ω	1	2815S	BTS-560	Low-Band RF Amp. Grid
R17	4700Ω 20%	1	1491GS	BTS-4700	Low-Band RF Amp. Screen
R18	1000Ω	1	1491GS	BTS-1000	Low-Band RF Amp. Plate Decoupling - See Note 3
R19	150Ω 20%	1	1496GS	BTS-150	Low-Band RF Amp. Decoupling
R20	22000Ω	1	1491GS	BTS-22K	Image Rejection Trap Shunt
R21	10KΩ 20%	1	1491GT		Low-Band Converter Grid Coil Shunt
R22	1000Ω	1	1491GS	BTS-1000	Low-Band Converter Grid - See Note 3
R23	100KΩ 20%	1	1491G		Converter Grid
R24	4700Ω 20%	1	1491GS	BTS-4700	Converter Plate Coil Shunt
R25	150Ω 20%	1	1496GS	BTS-150	Converter Plate Decoupling
R26	10KΩ 20%	1	1491GT		Low-Band Oscillator Grid
R27	4700Ω 20%	1	1491GS	BTS-4700	Low-Band Oscillator Plate
R28	150Ω 20%	1	1496GS	BTS-150	Low-Band Oscillator Plate Decoupling
R29	1000Ω	2	1490446	BTS-1000	Decoupling
R30	100Ω	1	1490GS	BTS-100	Decoupling - See Note 3
R31	330Ω	1	1490GS	BTS-330	AGC Network - See Note 3
R32	330Ω	1	1490GS	BTS-330	AGC Network - See Note 3
R33	10KΩ	1	2817G	BTS-10K	1st Video I.F Transformer Shunt
R34	82Ω	1	2814S	BTS-82	1st Video I.F. Amp. Cathode
R35	1500Ω	1		BTS-1500	1st Video I.F Amp. Screen - See Note 5
R36	100Ω	1	1490GS	BTS-100	AGC Network - See Note 3
R37	12KΩ	1			2nd Video I.F. Transformer Shunt - See Note 6
R38	82Ω	1	2814S	BTS-82	2nd Video I.F Amp. Cathode
R39	1500Ω	1		BTS-1500	2nd Video I.F Amp. Screen - See Note 5
R40	100Ω	1	1490GS	BTS-100	1st Video I.F Amp. Plate Decoupling - See Note 3
R41	100Ω	1	1490GS	BTS-100	Decoupling - See Note 3
R42	100Ω	1	1490GS	BTS-100	AGC Network - See Note 3
R43	6800Ω	1	2816S		3rd Video I.F Transformer Shunt - See Note 14
R44	6800Ω	1	2816S		2nd Video I.F Transformer Shunt - See Note 14
R45	82Ω	1	2814S	BTS-82	3rd Video I.F Amp. Cathode
R46	100Ω	1	1490GS	BTS-100	3rd Video I.F Amp. Plate Decoupling - See Note 3
R47	100Ω	1	1490GS	BTS-100	Decoupling - See Note 3
R48	39KΩ	1	2817S	BTS-39K	Decoupling
R49	100Ω	1	1490GS	BTS-100	Decoupling - See Note 3
R50	10KΩ 20%	1	1491GT	BTS-10K	4th Video I.F Transformer Shunt - See Note 8
R51	220Ω	1		BTA-220	4th Video I.F Amp. Cathode - See Note 7
R52	100Ω	1	1490GS	BTS-100	4th Video I.F Amp. Decoupling - See Note 3
R53	47KΩ 20%	1	1491H	BTS-47K	Keyed AGC Grid
R54	47KΩ 20%	1	2817A	BTS-47K	AGC Network
R55	330Ω	1		BTS-3300	Video Det. Diode Load - See Note 8
R56	22Ω	2	1490ST	BW-2-22	Bias Network - See Note 9
R57	1MΩ	1		BW-1-1M	Video Amp. Cathode - Wire Wound - See Note 9 and 10
R58	10KΩ	2	1490S2	BTS-10K	Video Amp. Screen
R59	1200Ω	2		BTS-1200	Video Amp. Plate - See Note 2 and 4
R60	2700Ω	1	1493S6	BTS-2700	Video Amp. Plate - See Note 11
R61	470KΩ	1	1491T	BTA-470K	DC Restorer Diode Load
R62	220KΩ 20%	1	1491S	BTS-220K	Voltage Divider - See Note 2
R63	4700Ω 20%	1	1491GS	BTS-4700	Picture Tube Grid - See Note 4
R64	100KΩ 20%	1	1491S	BTS-100K	Picture Tube Cathode
R65	47KΩ	1	1491I	BTS-47K	1st Sound I.F Amp. Grid
R66	15KΩ	1	1491GS	BTS-15K	1st Sound I.F Amp. Screen
R67	47KΩ	1	1491I	BTS-47K	2nd Sound I.F Amp. Grid
R68	15KΩ	1	1491GS	BTS-15K	2nd Sound I.F Amp. Decoupling
R69	22KΩ	1	2740T	BTS-22K	Ratio Det. Diode Load
R70	22KΩ	1	2740T	BTS-22K	Ratio Det. Diode Load
R71	18KΩ	1	2817S	BTS-18K	De-emphasis
R72	10Meg	1	1492S	BTS-10Meg	A.F Amp. Grid
R73	470KΩ	1	1491T	BTA-470K	A.F Amp. Plate
R74	47KΩ	1	1491I	BTS-47K	A.F Amp. Plate Decoupling
R75	470KΩ	1	1491T	BTS-470K	Output Grid - See Note 16
R76	270Ω	1	1491TO	BTA-270	Output Cathode
R77	33KΩ 20%	1	1491IO	BTS-33K	Voltage Divider
R78	330KΩ 20%	1	1491GS	BTS-330K	1st Sync. Clipper Plate
R79	1Meg 20%	1	1491U9	BTS-1Meg	2nd Sync. Clipper Grid
R80	100KΩ 20%	1	1491U3	BTS-100K	2nd Sync. Clipper Plate
R81	47KΩ 20%	1	1491U1	BTS-47K	Voltage Divider
R82	1Meg 20%	1	1491U9	BTS-1Meg	Sync. Amp.-Phase Inv. Grid
R83	2700Ω	1	2816S	BTS-2700	Sync. Amp.-Phase Inv. Cathode
R84	1200Ω	1	2815S	BTS-1200	Sync. Amp. - Phase Inv. Cathode
R85	3300Ω 5%	1	2816S	BTS-3900-5%	Sync.-Amp.-Phase Inv. Plate
R86	22KΩ	1	1491U9	BTS-22K	Integrator
R87	820Ω	1	2816S	BTS-8200	Integrator
R88	820Ω	1	2816S	BTS-8200	Integrator
R89	1Meg 20%	1	1491U9	BTS-1Meg	Vert. Osc. Grid
R90	1.8Meg	1	2819A	BTS-1.8Meg	Vertical Oscillator Plate
R91	2.2Meg 20%	1	2819S	BTS-2.2Meg	Vertical Oscillator Plate Decoupling
R92	10KΩ 20%	1	1491GT	BTS-10K	Vertical Peaking
R93	10KΩ 20%	1	1491GT	BTS-10K	Vertical Osc. Transformer Shunt - See Note 2
R94	2.2Meg 20%	1	2819S	BTS-2.2Meg	Vertical Amp. Grid
R95	820Ω	1	2815T	BTS-820	Vertical Amp. Cathode - See Note 2
R96	100KΩ	1	2820S	BTS-100K	Horizontal Phase Det. Diode Load
R97	100KΩ	1	2820S	BTS-100K	Horizontal Phase Det. Diode Load
R98	100KΩ	1	2820S	BTS-100K	Horizontal AFC Filter - See Note 15

RESISTORS (CONT.)

ITEM No.	RATING RESISTANCE	WATTS	REPLACEMENT DATA STROM-CARL PART No.	IRC PART No.	IDENTIFICATION CODES
R99	330KΩ	1	1491I6	BTS-330K	Horizontal AFC Filter - See Note 15
R100	1500Ω	1	1491GS	BTS-1500	Horizontal MV Cathode
R101	56000Ω 20%	1	1491S4	BTS-5600	Horizontal MV Plate
R102	100KΩ 20%	1	1491I3	BTS-100K	Horizontal MV Grid
R103	270KΩ	1	2818S4	BTS-270K	Horizontal MV Plate
R104	8200Ω 20%	1		BTA-8200	Horizontal MV Decoupling - See Note 4
R105	68Ω		1490S4		Parasitic Suppressor
R106	1Meg 20%	1	1491I9	BTS-1Meg	Horizontal Output Grid
R107	12KΩ	2	1491O5S	BTS-12K	Horizontal Output Screen
R108	100Ω	2	1490T9	BW-2-33	Horizontal Feedback - Wire Wound - See Note 2
R109	680KΩ	1	1491S8	BTS-680K	HV Rectifier Load
R110	680KΩ	1	1491S8	BTS-680K	HV Rectifier Load
R111	680KΩ	1	1491S8	BTS-680K	HV Rectifier Load
R112	680KΩ	1	1491S8	BTS-680K	HV Rectifier Load
R113	3300Ω	10	1493S5	2 3/4A-3300	Decoupling - Wire Wound
R114	1200Ω	20	1491S6	2D-1200	Voltage Divider - Wire Wound
R115	100KΩ 20%	1	1491I3	BTS-100K	Filter
R116	100KΩ 20%	1	1491I3	BTS-100K	Filter
R117	100KΩ 20%	1	1491I3	BTS-100K	Filter
R118	100KΩ 20%	1	1491I3	BTS-100K	Filter
R119	33Ω	2	1490Z9	BW-2-33	Damping
R120	220Ω	2	1490T2	BW-2-220	Focus Coil Shunt - See Notes 2 and 12
R121	330KΩ	1	2818S	BTS-330K	Trap Coil Shunt - See Note 2
R122	8200Ω	1	3720O	BTA-8200	4th Video I.F Amp. Plate Decoupling - See Note 2
R123	100Ω	1	2814T		Parasitic Suppressor - See Note 2
R124	1000Ω	1	1491GS	BTS-1000	Acc. Anode Load - See Note 2
R125	27KΩ	1	2817A	BTS-27K	Voltage Divider - See Notes 2 and 13
R126	6.7Meg	1	1491Z3	BTS-6.7Meg	Horizontal Phase Det. Diode Load - See Note 2
R127	330KΩ	1	2818S	BTA-330K	Horizontal Output Screen - See Note 2
R128	6.8Meg	1	1491Z4	BTS-6.8Meg	Voltage Divider - See Note 2
R129	1Meg	1	1491I9	BTS-1Meg	Voltage Divider - See Note 17.
R130	100KΩ	1	1491I3	BTS-100K	Bleeder - See Note 2
R131	100KΩ	1	1491I3	BTS-100K	Bleeder - See Note 2
R132	470Ω	1	1491I6	BTA-470	Vertical Amp. Decoupling - See Note 2
R133	4.7Ω	1	1493S2		Horizontal Feedback Transformer Shunt - See Note 2
R134	470KΩ	1	1491I7	BTS-470K	Series Phono Input - See Note 2

Note 2. Not used in all models.
Note 3. Some models use 2.2 microhenries choke in this application.
Note 4. Some models use 2200Ω resistors in this application.
Note 5. Some models use 1000Ω resistor in this application.
Note 6. Some models use 6800Ω resistor in this application.
Note 7. Some models use 150Ω resistor in this application.
Note 8. Some models use 470Ω resistor in this application.
Note 9. Some models use 12Ω resistor in this application.
Note 10. Some models use 22Ω resistor in this application.
Note 11. Some models use 1800Ω resistor in this application.
Note 12. Some models use 68Ω resistor in this application.
Note 13. Some models use 18KΩ resistor in this application.
Note 14. Some models use single 3300Ω resistor in place of R43 and R44.
Note 15. Some models use single 470KΩ resistor in place of R98 and R99.
Note 16. Some models use series resistor in this application to obtain desired value.
Note 17. Some models use 100KΩ resistor in this application.

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	SEC. 1	SEC. 2	SEC. 3	REPLACEMENT DATA STROM-CARL PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	117VAC	880VCT	5VAC	6.3VAC	161423			
	② 2.3A	.250ADC	③ 3A	② 1.2A				
				SEC. 4				
				6.3VAC				
				② 8.4A				

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING DC RESISTANCE PRI.	SEC.	STROM-CARL PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	NOTES
T2	170Ω	95Ω	114858	A-8122	A-4000 ③	T80-3	Vertical Block Osc. Trans
T3	115Ω	53Ω	161089				Horizontal Output Trans.
	Tap 40Ω	Tap④ 50Ω and 58Ω	161040 ④				
	SEC. 2	SEC. 3					
	2.1Ω	0Ω					
		SEC. 4					
		0Ω					
T4	1.1KΩ		161252	A-8123	A-3037	T80-5 ③	Vertical Output Trans.
	Tap						
	10.5Ω						
T5A	180				MDF-70		Horizontal Deflection Coil
B	46Ω						Vertical Deflection Coil
T6	1.4KΩ		114883 ④				Focus Coil
			114687 ⑤				

③ Drill one new mounting hole.
④ Used with 16HR4 and 16TP4 tubes.
⑤ Used with 16HR4 tube.
[E] Used in some models.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	SEC.	DC RES. PRI.	SEC	REPLACEMENT DATA STROM-CARL PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
T7	5.5KΩ	2.7Ω	450Ω	.3Ω	161249	A-3877 ③	A-3019 ③	R0-9 ③	③ Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA STROM-CARL PART No.	VIKING PART No.	QUAM PART No.	NOTES
	FIELD RES.	V. C. IMP.				
SP1A	PM	2.7Ω	155168 ①	52524	12A4A	① All chassis carrying "T" suffix in its model number use 8 1/2" speaker with one of the following part numbers 155168 or 155121.
B	PM	2.7Ω	155181 ②	12J12		② All chassis carrying "C" or "RP" suffix in its models number use 12" speaker with one of the following part numbers 155181, 155169 , or 155154.
	CONE DIA.	V. C. DIA.				
SP2A	5 1/2"	9/16"				
	12"	1"				

PARTS LIST AND DESCRIPTIONS (Continued)

FILTER CHOKE

ITEM No.	RATINGS: TOTAL DIRECT CURRENT	RATINGS: D. C. RESISTANCE	RATINGS: INDUCTANCE (0 CURRENT 1000 ~)	REPLACEMENT DATA: Strom-Carl. PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.	INSTALLATION NOTES
L1	.250	87Ω	2.3 Henries	161020		C-2991 ③	TR3300 ③	③ Drill one new mounting hole.

COILS (RF-IF)

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: STROM-CARL PART No.	REPLACEMENT DATA: MEISSNER PART No.	REPLACEMENT DATA: IRC PART No.	NOTES
L2	Low-Band Ant. Trans.	0Ω	.1Ω	114057			
L3	High-Band Ant. Trans.	0Ω	0Ω	114676			
L4	RF Choke	1.8Ω		114693		CLA	2.2 Microhenries
L5	Low-Band RF Primary	.1Ω		114065			
L6	Low-Band Image Trap	0Ω		114642			
L7	Low-Band RF Secondary	.1Ω		114065			
L8	RF Choke	1.8Ω		114693		CLA	2.2 Microhenries (Some models use 1KΩ resistor)
L9	Low-Band Osc. Coil	.2Ω		114065			
L10	High-Band RF Primary	0Ω		114066			
L11	High-Band RF Coil Link	0Ω		20608			
L12	High-Band RF Secondary	0Ω		114066			
L13	High-Band Osc. Coil	0Ω		114066			
L14	RF Choke	.1Ω		114060			
L15	Conv. Plate Coil	.1Ω		114061			
L16	RF Choke	1.8Ω		114693		CLA	2.2 Microhenries (Some models use 330Ω resistor.
L17	1st Video IF	.1Ω	1.2Ω	114377			
L18	RF Choke	1.8Ω		114693		CLA	2.2 Microhenries (Some models use 330Ω resistor)
L19	RF Choke	1.8Ω		114693		CLA	2.2 Microhenries (Some models use 100Ω resistor)
L20	2nd Video IF	1Ω	1Ω	114376			
L21	RF Choke	1.8Ω		114693		CLA	2.2 Microhenries (Some models use 100Ω resistor
L22	RF Choke	1.8Ω		114693		CLA	2.2 Microhenries (Some models use 100Ω resistor)
L23	RF Choke	1.8Ω		114693		CLA	2.2 Microhenries (Some models use 100Ω resistor)
L24	Sound Trap	2Ω		114384			
L25	3rd Video IF	1Ω	1Ω	114376			
L26	RF Choke	1.8Ω		114693		CLA	2.2 Microhenries (Some models use 100Ω resistor)
L27	RF Choke	1.8Ω		114693		CLA	2.2 Microhenries (Some models use 100Ω resistor)
L28	Sound Trap	.1Ω		114394			
L29	4th Video IF	.4Ω	.4Ω	114382			
L30	RF Choke	1.8Ω		114693		CLA	2.2 Microhenries (Some models use 100Ω resistor)
L31	RF Choke	1.8Ω		114693		CLA	2.2 Microhenries (Some models use 100Ω resistor)
L32	RF Choke	1.8Ω		114693		CLA	2.2 Microhenries (Some models use 100Ω resistor)
L33	5th Video IF	1Ω	1Ω	114376			
L34	Peaking	22Ω		114714			Yellow Dot (17 series only)
L35A	Peaking	12Ω		114715			Wound on 15K resistor (series 17)
B	Peaking			114669			75 Microhenries (16 and 116 series)
L36	Peaking	14Ω		114714			17 series only
L37A	4.5MC Trap	1.9Ω		114392			17 series
B	Peaking			114704			Wound on 8.2KΩ resistor
L38A	Peaking	9Ω		114713			17 series only
B	Peaking			114705			400 Microhenries (16 and 116 series)
L39	1st Sound IF	5.8Ω		114374			
L40	2nd Sound IF	1.9Ω		114383			
L41	Ratio Det. Trans.	5.5Ω	.8Ω	114375			
L42	Horiz. Osc. Trans.	115Ω		114069			
L43	Horiz. AFC Coil			114090			Not used in all models
L44	Horiz. Lin.	5.8Ω		114084			Tap@ 1.7Ω
L45	Horiz. Size	2.3Ω		114105			
L46	Line Choke			114696			Models 116 series.

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA: STROM-CARL PART No. FUSE	REPLACEMENT DATA: STROM-CARL PART No. HOLDER	REPLACEMENT DATA: LITTELFUSE PART No. FUSE	REPLACEMENT DATA: LITTELFUSE PART No. HOLDER	REMARKS
M1	3AG	.250			312.250	357001	

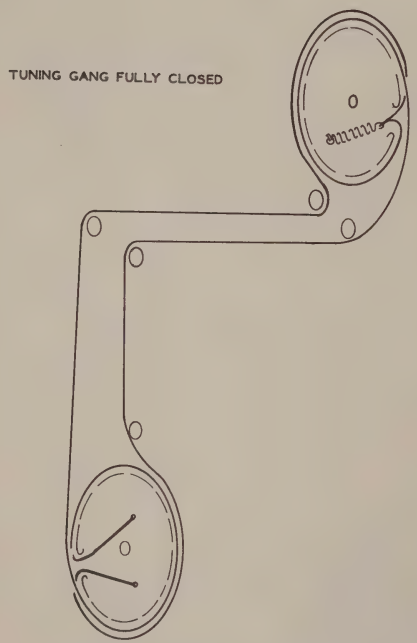
MISCELLANEOUS

ITEM No.	PART NAME	STROM-CARL PART No.	NOTES
M2	RF Tuner		
M3	Switch		Function (High Band-Low Band-Phono)
M4	Ion Trap	114645	
B2	Trimmer	110047	Horizontal Drive (30-273MMF)

DISASSEMBLY INSTRUCTIONS

1. Remove eight push-on type control knobs.
2. Remove eight wood screws holding rear cover in place. Remove rear cover.
3. Disconnect speaker.
4. Remove four metal screws from chassis. Remove chassis.

NOTE: FOR PICTURE TUBE REMOVAL, IT IS NECESSARY TO REMOVE THE CHASSIS AS OUTLINED ABOVE.



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TELE-TONE
MODEL TV-316 (Ch. TAH)

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MODEL TV-316 (Ch. TAH)

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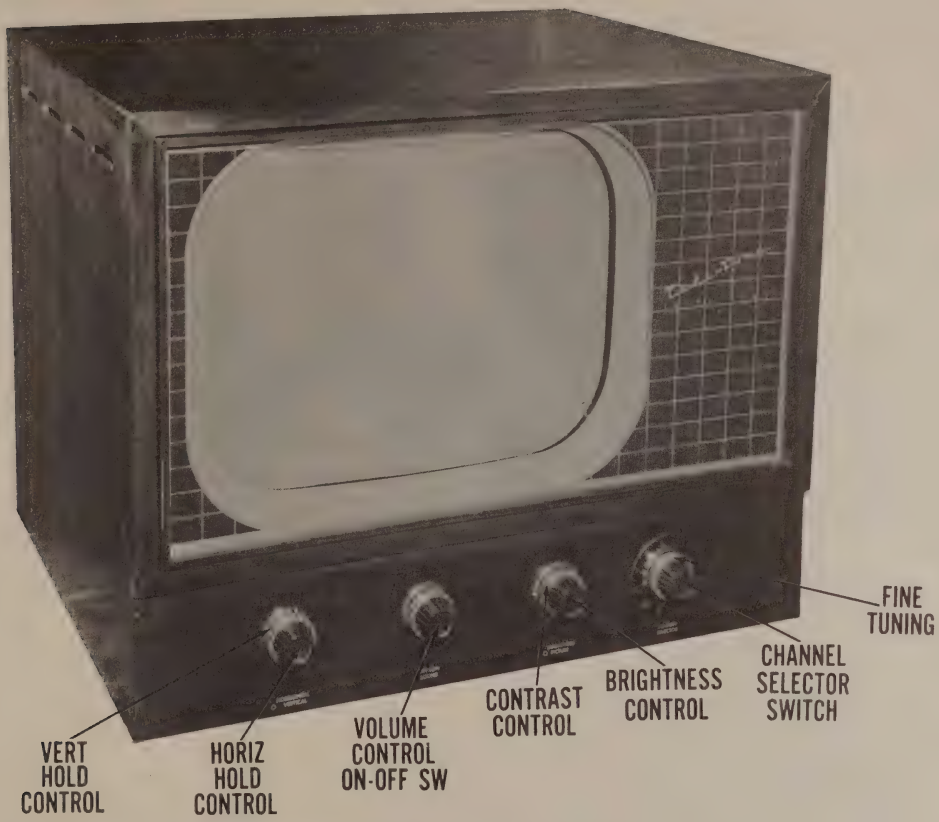
DATE 6-51 SET 135 FOLDER 13



TELE-TONE
MODEL TV-316 (Ch. TAH)

TRADE NAME	Tele-Tone, Model TV-316 (Ch. "TAH")
MANUFACTURER	Tele-Tone Radio Co., Amboy Ave. And Myrtle St., Elizabeth (2), N.J.
TYPE SET	Television Receiver
TUBES	Twenty One
POWER SUPPLY	110-120 Volts AC - 60 Cycle
TUNING RANGE-	Channels 2 thru 13
RATING	2.1 Amp. @ 117 Volts AC

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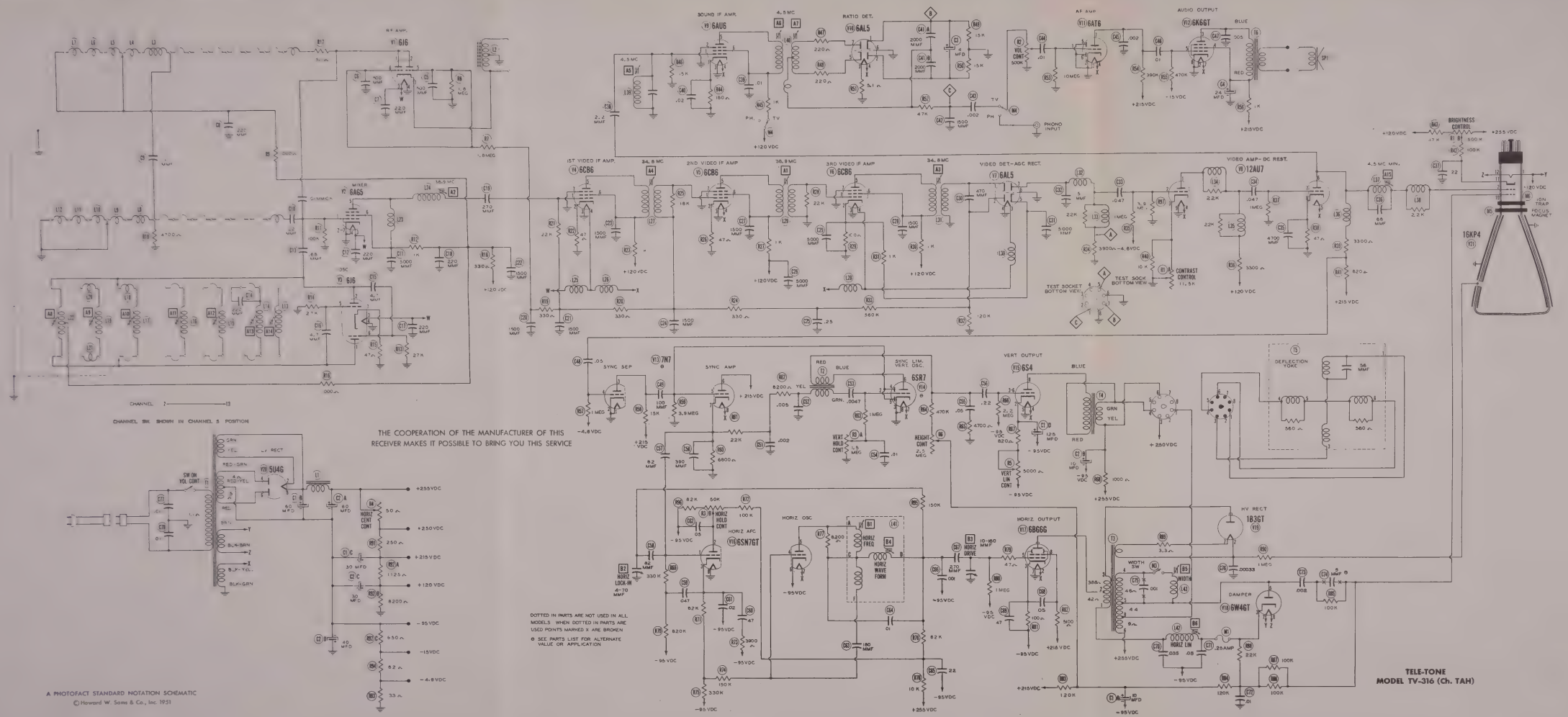
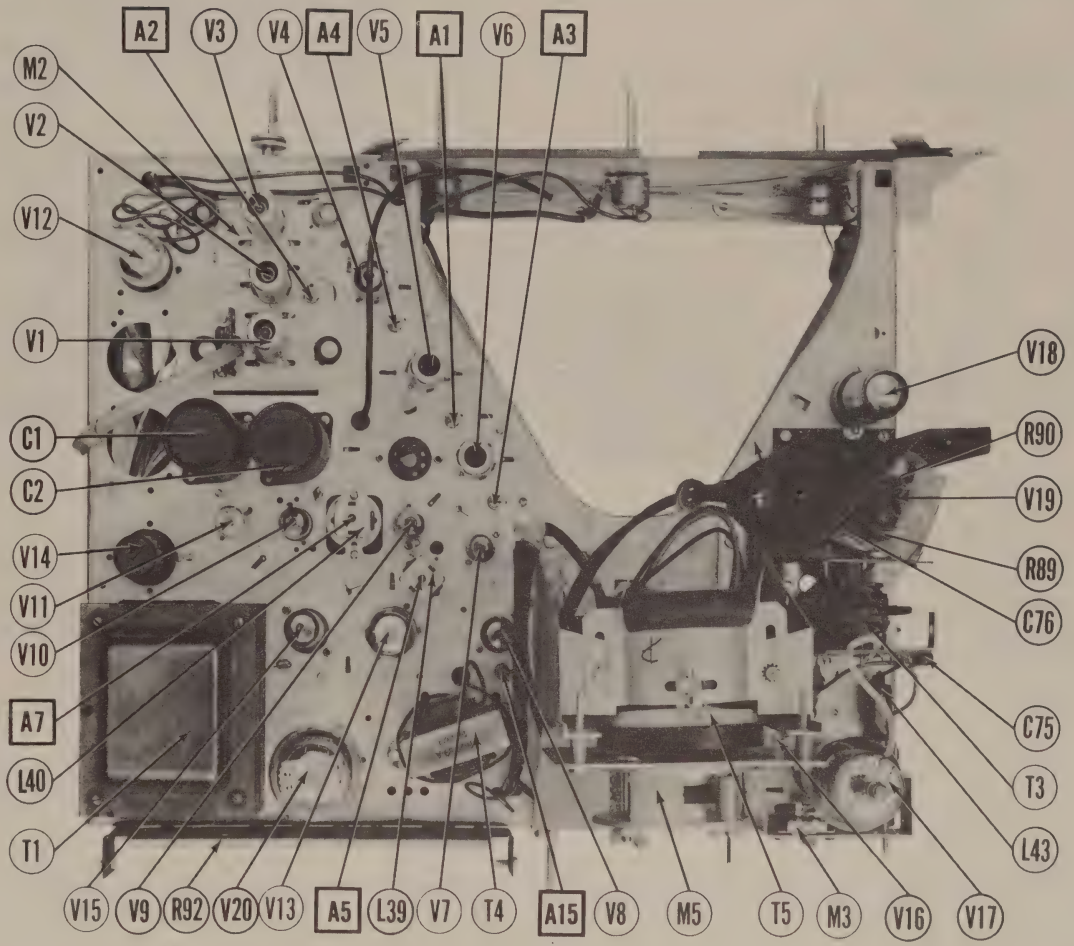
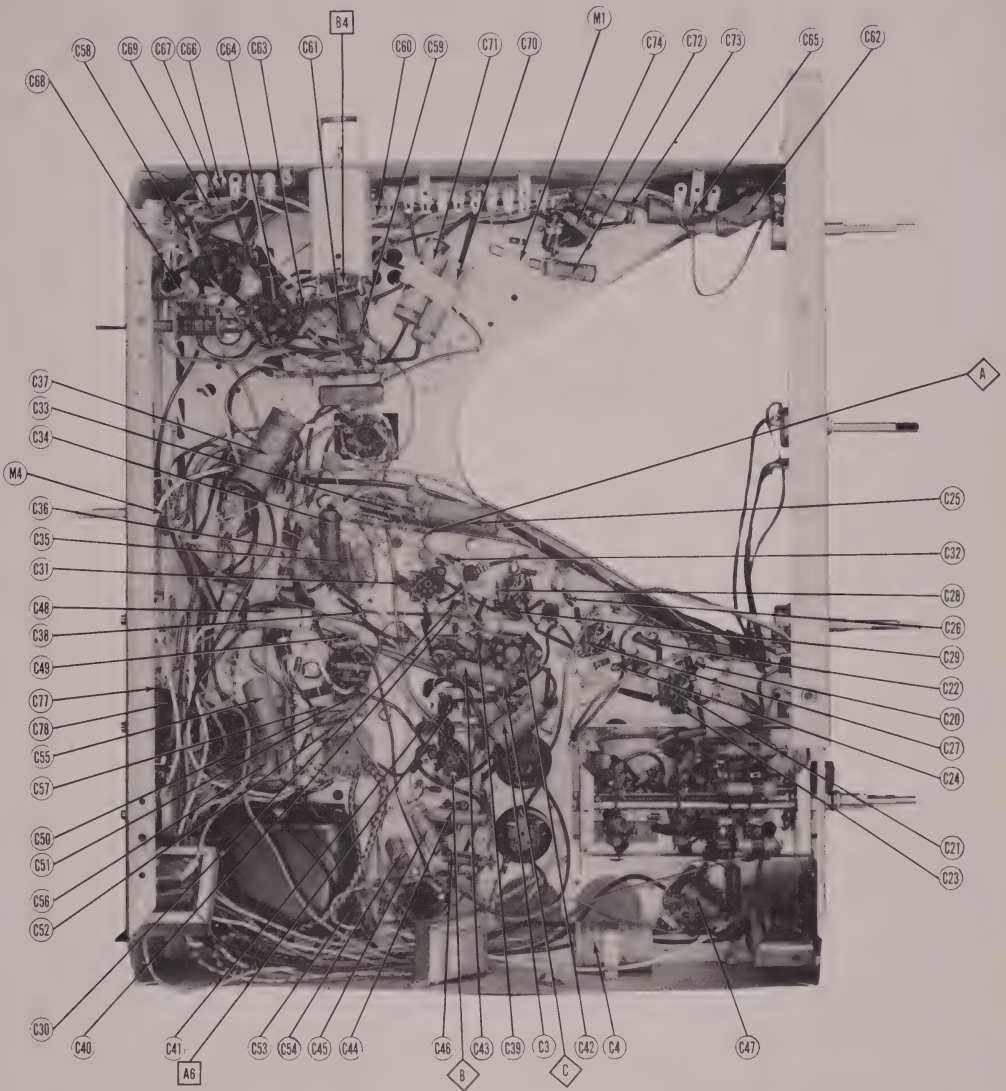
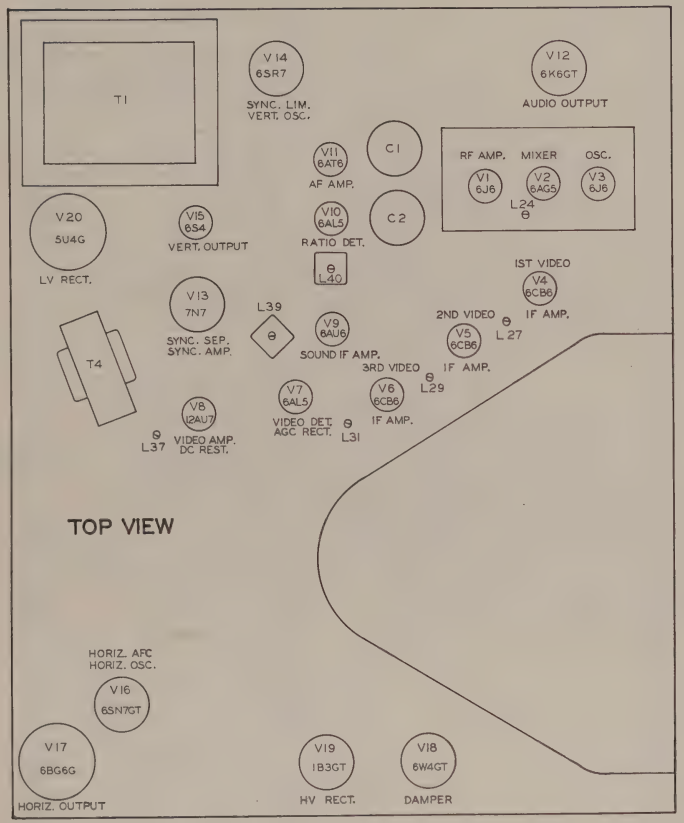

TELE-TONE
MODEL TV-316 (Ch. TAH)
CHANNEL SW. SHOWN IN CHANNEL 5 POSITION
THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE
DOTTED IN PARTS ARE NOT USED IN ALL MODELS. WHEN DOTTED IN PARTS ARE USED POINTS MARKED X ARE BROKEN
SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION
A PHOTOFACT STANDARD NOTATION SCHEMATIC
© Howard W. Sams & Co., Inc. 1951
TELE-TONE
MODEL TV-316 (Ch. TAH)

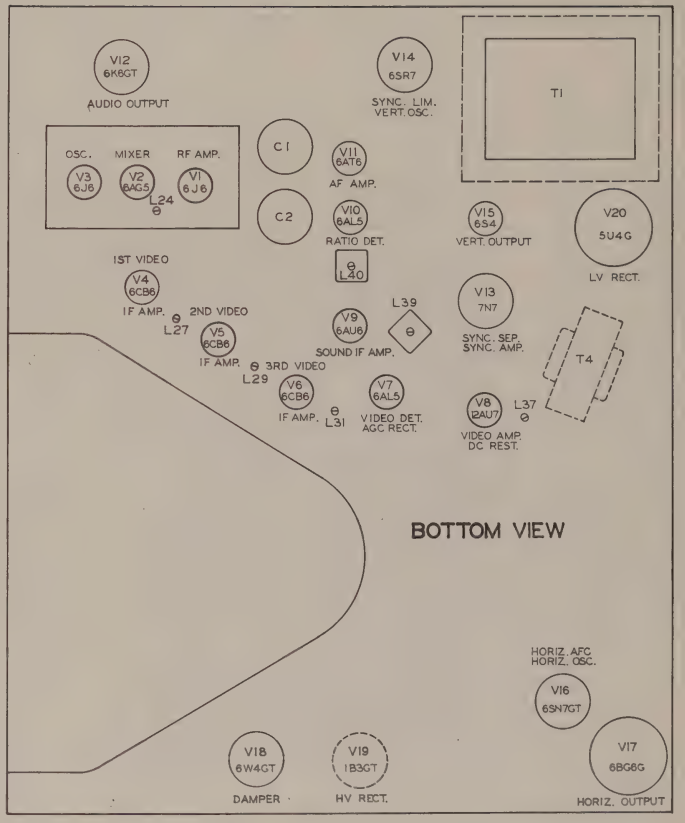


CHASSIS TOP VIEW



CHASSIS BOTTOM VIEW- CAPACITOR AND ALIGNMENT IDENTIFICATION





TUBE PLACEMENT CHART

TELE-TONE
MODEL TV-316 (Ch. TAH)

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage shock hazard may be eliminated by removing the horizontal oscillator tube, (V16), from its socket.

VIDEO IF ALIGNMENT

Connect the negative lead of a 3 volt battery to the junction of R33 and C25. Connect the positive lead to chassis.
Remove the local oscillator tube, (V3), to prevent the possibility of erroneous indications.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to an ungrounded tube shield floating over mixer tube (V2). Low side to chassis.	36.9MC (Unmod.)	Any	DC probe to Point (A). Common to chassis.	A1, A2	Adjust for maximum deflection.
2.	"	"	34.8MC	"	"	A3, A4	"

OVERALL VIDEO IF RESPONSE CHECK

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
3.	Direct	High side to an ungrounded tube shield floating over mixer tube (V2). Low side to chassis.	35MC (10MC SWP)	32.8MC 37.3MC	Any	Vert. amp. to Point (A). Low side to chassis.		Check for response curve similar to figure 1. If necessary retouch A1 thru A4 for proper response.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
4.	.01MFD	High side to Pin 7 (grid) of 12AU7 (V8). Low side to chassis.	4.5MC (Unmod.)	Any	DC probe to Point (B). Common to chassis.	A5, A6	Adjust for maximum deflection.
5.	"	"	"	"	DC probe to Point (C). Common to chassis.	A7	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60 ∿ modulation and 450KC sweep. Use 120 ∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
4.	.01MFD	High side to Pin 7 (grid) of 12AU7, (V8). Low side to chassis.	4.5MC (450KC SWP)	4.5MC	Any	Vert. amp. to Point (B). Low side to chassis.	A5, A6	Disconnect stabilizer capacitor C3. Adjust for maximum amplitude and symmetry as per figure 2.
5.	"	"	"	"	"	Vert. amp. to Point (C). Low side to chassis.	A7	Reconnect capacitor C3. Adjust A7 so 4.5MC occurs at center of crossover lines as per figure 3. SLIGHTLY retouch A6 for maximum amplitude and straightness of crossover lines.

OSCILLATOR ALIGNMENT

Replace the local oscillator tube, (V3), in its socket.
Set the fine tuning control to the mid-position of its range.
The seven oscillator coils are so arranged that channels 3 thru 12 are paired with one variable and two fixed coils. Each pair of channels are adjusted with only one adjustment, therefore only the channels which are available in the area where the set is to operate should be aligned. It should be noted that the channel 2 coil is in parallel with all of the other channel oscillator coils, therefore it is essential that channel 2 be properly aligned before any other channel.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
6.	Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	57MC (10MC SWP)	55.25MC 59.75MC	2	Vert. amp. to Point (A). Low side to chassis.	A8	Adjust to place sound marker as shown in figure 4. The video marker should be at 50%.
			63MC (10MC SWP) 69MC (10MC SWP)	61.25MC 65.75MC 67.25MC 71.75MC	3 or 4		A9	
			79MC (10MC SWP) 85MC (10MC SWP)	77.25MC 81.75MC 83.25MC 87.75MC	5 or 6		A10	
			177MC (10MC SWP) 183MC (10MC SWP)	175.25MC 179.75MC 181.25MC 185.75MC	7 or 8		A11	
			189MC (10MC SWP) 195MC (10MC SWP)	187.25MC 191.75MC 193.25MC 197.75MC	9 or 10		A12	
			201MC (10MC SWP) 207MC (10MC SWP)	199.25MC 203.75MC 205.25MC 209.75MC	11 or 12		A13	
			213MC (10MC SWP)	211.25MC 215.75MC	13		A14	

THE RF PORTION OF THIS TUNER HAS BEEN PRE-SET AT THE FACTORY AND IS VERY STABLE. ALIGNMENT OF THIS PORTION SHOULD NOT BE REQUIRED IN THE FIELD.

4.5 MC TRAP ADJUSTMENT

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
7.	.01MFD	High side to Pin 7 (grid) of 12AU7 (V8). Low side to chassis.	Not used	4.5MC (400 ∿ Mod.)	Any	Vert. amp. to Pin 2 of picture tube. Low side to chassis.	A15	Adjust for MINIMUM 400 ∿ indication on scope. After alignment is completed tune in a test pattern and retouch A15 for maximum vertical wedge definition.

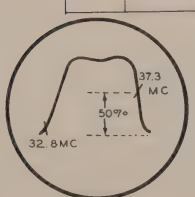


FIG. 1

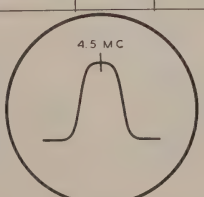


FIG. 2

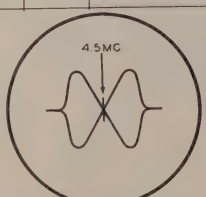


FIG. 3

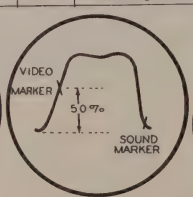
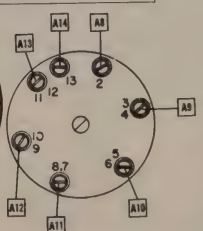
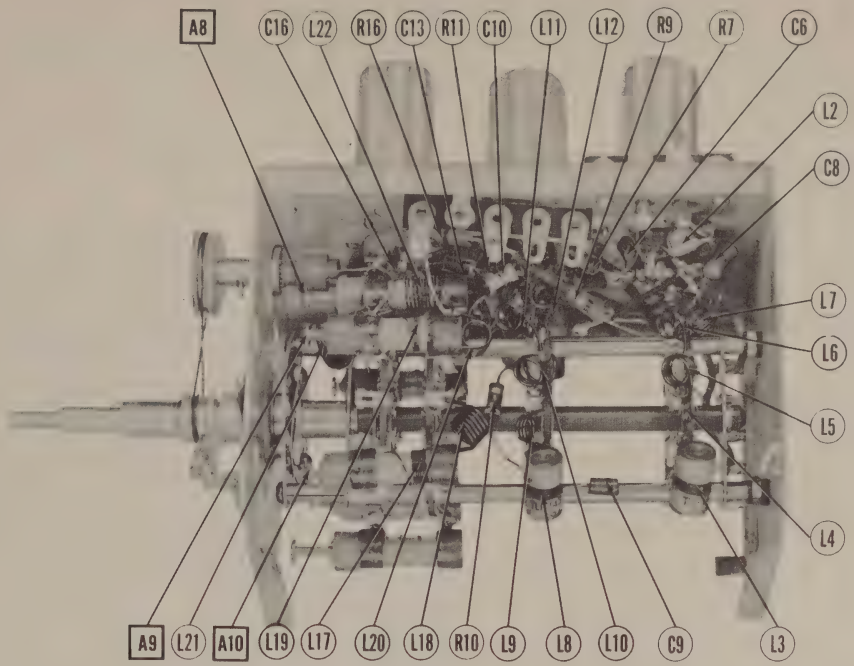


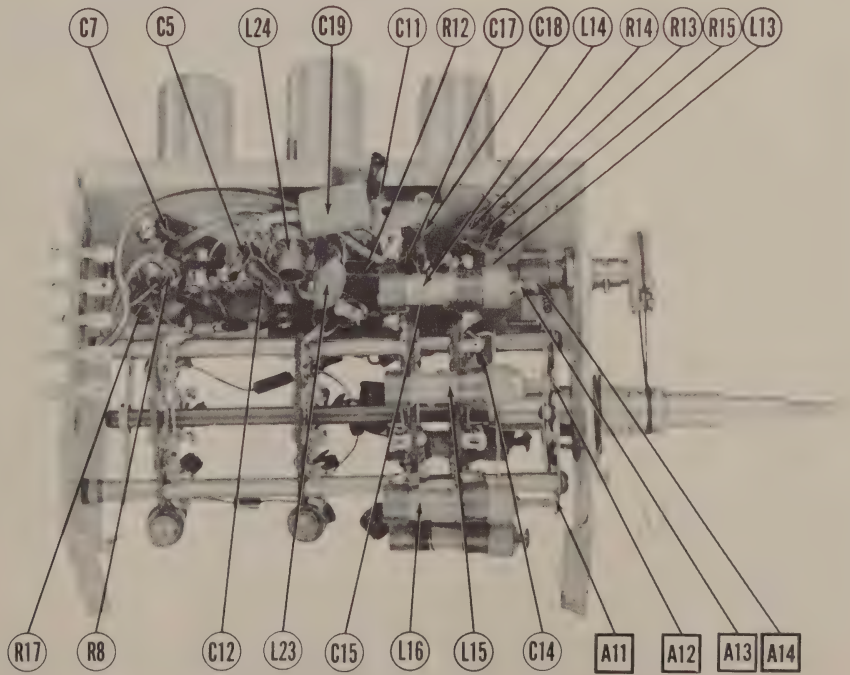
FIG. 4



OSCILLATOR ALIGNMENT POINTS



RF TUNER-RIGHT SIDE



RF TUNER-LEFT SIDE

VOLTAGE AND RESISTANCE MEASUREMENTS

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6J6	95VDC	95VDC	6.3VAC	0V	.1VDC	.1VDC	0V		
V 2	6AG5	-2VDC	0V	6.3VAC	0V	100VDC	100VDC	0V		
V 3	6J6	95VDC	95VDC	6.3VAC	0V	§-2.7VDC	§-3.9VDC	.4VDC		
V 4	6CB6	-.3VDC	.4VDC	0V	6.3VAC	110VDC	110VDC	0V		
V 5	6CB6	-.2VDC	.4VDC	0V	6.3VAC	110VDC	110VDC	0V		
V 6	6CB6	0V	1.2VDC	0V	6.3VAC	110VDC	110VDC	0V		
V 7	6AL5	0V	-.2VDC	6.3VAC	0V	1.2VDC	0V	-2.5VDC		
V 8	12AU7	117VDC	-.6VDC	3.8VDC	6.3VAC	6.3VAC	140VDC	0V	.8VDC	0V
V 9	6AU6	0V	0V	0V	6.3VAC	112VDC	112VDC	1.3VDC		
V 10	6AL5	.1VDC	-.1VDC	1.2VAC	6.3VAC	-.1VDC	0V	-.1VDC		
V 11	6AT6	-.6VDC	0V	0V	6.3VAC	0V	0V	65VDC		
V 12	6K6GT	215VDC	0V	185VDC	190VDC	-5.2VDC	-15VDC	6.3VAC	0V	
V 13	7N7	0V	0V	135VDC	-.8VDC	-1.8VDC	215VDC	0V	6.3VAC	
V 14	6SR7	0V	-40VDC -5VDC	0V	-1.8VDC	-1.8VDC	230VDC 115VDC	6.3VAC	0V	
V 15	6S4	0V	-80VDC -60VDC	-100VDC -75VDC	6.3VAC	0V	-100VDC -75VDC	0V	0V	240VDC 230VDC
V 16	6SN7GT	-95VDC	12VDC	-105VDC	-135VDC	85VDC	-95VDC	6.3VAC	0V	
V 17	6BG6G	0V	6.3VAC	-90VDC	0V	-110VDC	0V	0V	170VDC	TOP CAP *
V 18	6W4GT	440VDC	0V	460VDC	440VDC	255VDC	0V	120VDC	120VDC	
V 19	1B3GT	* DO NOT MEASURE								
V 20	5U4G	0V	260VDC	0V	-95VDC	0V	-95VDC	0V	260VDC	
V 21	16KP4	120VDC	140VDC	PIN 10 440VDC	PIN 11 250VDC	PIN 12 120VDC				

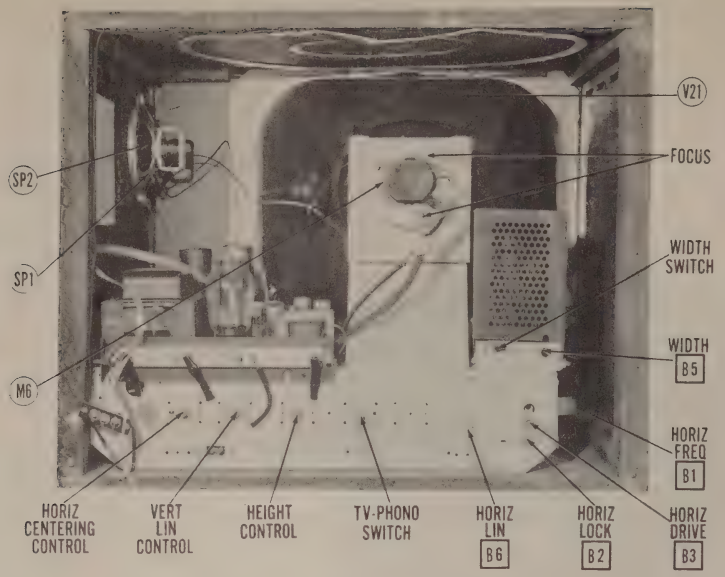
ALL MEASUREMENTS TAKEN WITH PICTURE TUBE REMOVED
HORIZONTAL CENTERING CONTROL COUNTER CLOCKWISE
TV-PHONO SWITCH IN TV POSITION
§ TAKEN WITH VACUUM TUBE VOLTMETER
* DO NOT MEASURE

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6J6	†2.8KΩ	†2.8KΩ	.1Ω	0Ω	1.2Meg	1.2Meg	0Ω		
V 2	6AG5	100KΩ	0Ω	.1Ω	0Ω	†2.8KΩ	†2.8KΩ	0Ω		
V 3	6J6	†2.8KΩ	†2.8KΩ	.1Ω	0Ω	27KΩ	27KΩ	47Ω		
V 4	6CB6	700KΩ	47Ω	0Ω	.1Ω	†2.4KΩ	†2.4KΩ	0Ω		
V 5	6CB6	700KΩ	47Ω	0Ω	.1Ω	†2.4KΩ	†2.4KΩ	0Ω		
V 6	6CB6	.2Ω	100Ω	0Ω	.1Ω	†2.4KΩ	†2.4KΩ	0Ω		
V 7	6AL5	.4Ω	120KΩ	.1Ω	0Ω	1.1KΩ	0Ω	3.9KΩ		
V 8	12AU7	†4.7KΩ	1Meg	6KΩ	.1Ω	.1Ω	†4.4KΩ	1Meg	47Ω	0Ω
V 9	6AU6	1Ω	0Ω	0Ω	.1Ω	†2.4KΩ	†2.4KΩ	180Ω		
V 10	6AL5	15KΩ	15KΩ	2.5Ω	.1Ω	Inf.	0Ω	Inf.		
V 11	6AT6	10Meg	0Ω	0Ω	.1Ω	0Ω	0Ω	†390KΩ		
V 12	6K6GT	Inf.	0Ω	†1.7KΩ	†1.3KΩ	470KΩ	115Ω	.1Ω	0Ω	
V 13	7N7	0Ω	0Ω	†15KΩ	1Meg	3.9Meg	†335Ω	6.8KΩ	.1Ω	
V 14	6SR7	0Ω	2.5Meg	0Ω	3.9Meg	3.9Meg	†590KΩ †3Meg	.1Ω	0Ω	
V 15	6S4	Inf.	6.6KΩ 1.1KΩ	2.2Meg	.1Ω	0Ω	2.2Meg	Inf.	Inf.	†1.7KΩ
V 16	6SN7GT	1.5Meg	†65KΩ	410KΩ	480KΩ	†90KΩ	765Ω	.1Ω	0Ω	
V 17	6BG6G	Inf.	.1Ω	865Ω	Inf.	1Meg	Inf.	0Ω	†5.4KΩ	TOP CAP #70Ω
V 18	6W4GT	#170KΩ	Inf.	†260KΩ	#22KΩ	†50Ω	Inf.	8KΩ	8KΩ	
V 19	1B3GT	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	TOP CAP #460Ω
V 20	5U4G	Inf.	8KΩ	Inf.	800Ω	Inf.	800Ω	Inf.	8KΩ	
V 21	16KP4	8KΩ	†4.4KΩ	PIN 10 #70KΩ	PIN 11 120KΩ	PIN 12 8KΩ				

ALL MEASUREMENTS TAKEN WITH PICTURE TUBE REMOVED
HORIZONTAL CENTERING CONTROL COUNTER CLOCKWISE
TV-PHONO SWITCH IN TV POSITION
† MEASURED FROM PIN 8 OF V20
# MEASURED FROM PIN 3 OF V 18

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltage measured at 1,000 ohms.
2. Pin numbers are counted in a clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. Front panels controls set at minimum.
6. Where readings may vary according to the setting of the service controls, both minimum and maximum readings are given.



CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

HORIZONTAL OSCILLATOR ALIGNMENT

Connect a short across terminals C and D of L41
Turn the set on and tune in a TV station, preferably a test pattern.
Turn the horizontal lock trimmer, (B2), and the horizontal drive trimmer, (B3) two full turns counter-clockwise from tight.
Adjust the horizontal frequency slug, (B1), until the picture synchronizes horizontally.
Adjust B3 clockwise just enough to remove the bright vertical bars in the picture. If the picture falls out of sync, adjust B1.
Turn the hold control fully counter-clockwise and momentarily interrupt signal.
Turn the hold control slowly clockwise and carefully note the least number of bars present just before the picture falls into sync. If there are less than 7, or more than 9 bars, adjust B2 slightly and repeat the check. Repeat this procedure until 7 to 9 bars are present at pull in.
Turn the hold control to the mid-position of its range and remove the short from L41.
Connect the vertical input of an oscilloscope between terminal C of L41 and chassis.
Adjust the horizontal phase adjustment (B4) until the broad and narrow peaks of the waveform on the oscilloscope are of equal height as shown in figure 5. If necessary during adjustment of B4, turn B1 to keep the picture synchronized.
Remove the oscilloscope and turn the hold control to fully counter-clockwise. Momentarily interrupt the signal by switching to another channel and back again.
Slowly turn the hold control clockwise and carefully note the least number of bars present before the picture synchronizes. If less than 2 1/2 or more than 3 1/2 bars are present adjust B2 slightly and repeat the check until 2 1/2 to 3 1/2 bars are present at the pull-in point. The picture should hold sync over at least 3/4 of the hold control range.

HORIZONTAL LINEARITY ADJUSTMENTS

Adjust the width slug, (B5), until the picture fills the mask horizontally.
Adjust the horizontal linearity slug, (B6), until the picture is symmetrical from left to right.
Since the horizontal drive trimmer (B3) effects both width and horizontal linearity it may be necessary to retouch it for optimum results; however, if B3 is changed a significant amount, recheck the horizontal oscillator alignment.

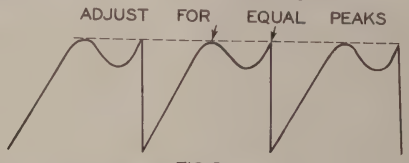
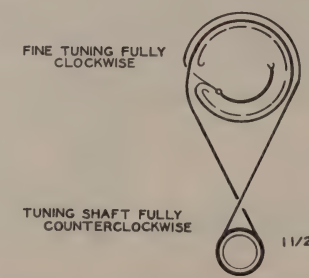


FIG. 5

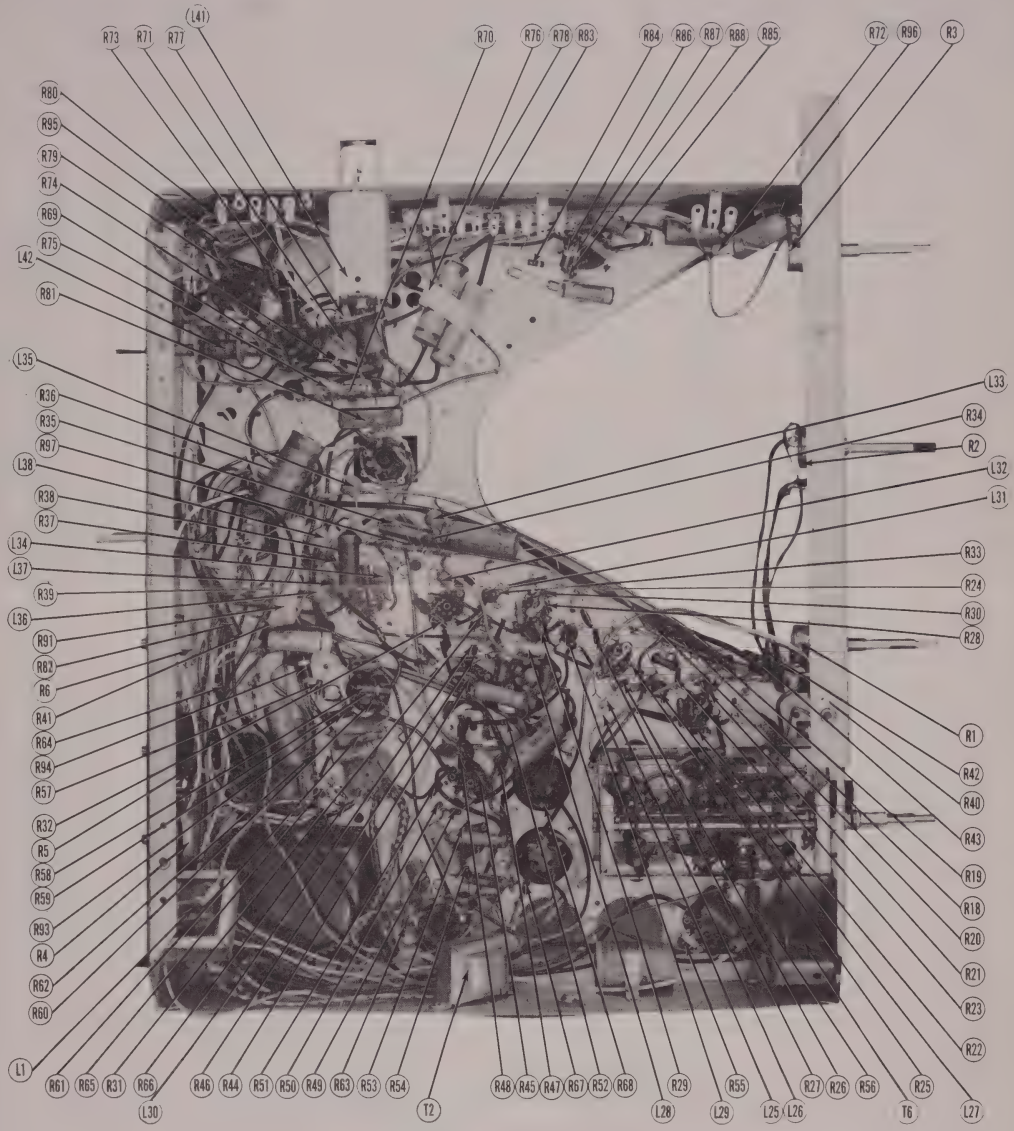
DISASSEMBLY INSTRUCTIONS

1. Remove seven push-on type control knobs.
2. Remove eight wood screws holding rear cover in place. Remove rear cover.
3. Disconnect built-in antenna.
4. Remove antenna terminal strip.
5. Disconnect speaker.
6. Remove four hex head bolts from chassis. Remove chassis.
7. Remove two nuts from speaker. Remove speaker.

NOTE: FOR PICTURE TUBE REMOVAL, IT IS NECESSARY TO REMOVE THE CHASSIS AS OUTLINED ABOVE.



FINE TUNING DRIVE CORD



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No	USE	REPLACEMENT DATA: TELETONE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	RF Amplifier	6J6	6J6	7BF	
V2	Mixer	6AG5	6AG5	7BD	
V3	Oscillator	6J6	6J6	7BF	
V4	1st Video IF Amp.	6CB6	6CB6	6CK	
V5	2nd Video IF Amp.	6CB6	6CB6	6CK	
V6	3rd Video IF Amp.	6CB6	6CB6	6CK	
V7	Video Detector - AGC Detector	6AL5	6AL5	6BT	
V8	Video Amp. -DC Restorer	12AU7	12AU7	9A	
V9	Sound IF Amp.	6AU6	6AU6	7DA	
V10	Ratio Detector	6AL5	6AL5	6BT	
V11	AF Amplifier	6AT6	6AT6	7BT	
V12	Audio Output	6K6GT	6K6GT	T6	
V13A	Sync. Separator - Sync. Amplifier	7N7	7N7	8B	
B	Sync. Separator - Sync. Amplifier	6SN7GT	6SN7GT	8BD	
V14A	Sync. Limiter - Vert. Oscillator	6SR7	6SR7	8Q	
B	Sync. Limiter - Vert. Oscillator	6BF6	6BF6	7BT	
V15	Vert. Output	6S4	6S4	9AC	
V16	Horiz. AFC - Horiz. Oscillator	6SN7GT	6SN7GT	8BD	
V17	Horiz Output	6BG6G	6BG6G	5BT	
V18	Damper	6W4GT	6W4GT	4CG	
V19	H.V. Rectifier	1B3GT	1B3GT	3C	
V20	L. V. Rectifier	5U4G	5U4G	5T	
V21	Picture Tube	16KP4	16KP4	12D	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP	RATING: VOLT	REPLACEMENT DATA: TELETONE PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CENTRALAB PART No.	REPLACEMENT DATA: CORNELL-DUBILIER PART No.	REPLACEMENT DATA: ERIE PART No.	REPLACEMENT DATA: SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	10	475	TCE147-D	AFX21Z5125D		UPT413		TVL-4811	▲ Decoupling ■ Filter ● Vertical Output Cathode ▲ Filter ■ Vert. Output Dec. ● Filter
B	60	450							
C	50	400							
D	.25	50							
C2A	60	450	TCE148-D	AFI5Z216GBD		UPT412		TVL-4710	
B	10	600							
C	30	300							
D	40	150							
C3	4	25	TCE104-D	PRS150/4		BR550		TVA-1203	Stabilizing Cap
C4	34	350		PRS350/34		BR2035A		TVA-1610	Output Dec.
C5	1500		TCC52-GM	BPD-00047	DD-471		G2SK-500	19C32	AGC Filter
C6	1500		TCC52-GM	BPD-00047	DD-471		G2SK-500	19C32	AGC Filter
C7	330		TCC52-SP	SD500	D6-331		G2SK-220	19C13	RF Amp. Fil.
C8	220		TCC221-7	S1220	D6-221		G2SK-220	19C13	RF Amp. Dec.
C9	11		TCC20-11		TCE-1				RF Coupling
C10	22		TCC22-12		TCE-22		NPO5E-22	19C12	RF Coupling
C11	5000		TCC502-SP		SD-502		81L-005	29C1	Mixer Decoupling
C12	220		TCC221-7	S1220	D6-221		G2SK-220	19C13	Mixer Filament
C13	.68		TCC68-8		TCE-.68				Osc. Coupling
C14	220		TCC221-7	S1220	D6-221		G2SK-220	19C13	RF Bypass
C15	4.7		TCC4.7-11	S15N750			N750K-5		Osc. Feedback
C16	4.7		TCC4.7-11	S15N750			N750K-5		Osc. Feedback
C17	220		TCC221-7	S1220	D6-221		G2SK-220	19C13	Osc. Filament
C18	220		TCC221-7	S1220	D6-221		G2SK-220	19C13	RF Bypass
C19	270	500	TCM271-7	1468-00025	D6-271	5WST5	G2SK-270	19F325	IF Coupling
C20	1500		TCC152-SP	SU500	D6-152	1WSD15	G2SL-005	29C8	AGC Filter
C21	1500		TCC152-SP	SD500	D6-152	1WSD15	G2SL-005	29C8	AGC Filter
C22	1500		TCC152-SP	SD500	D6-152	1WSD15	G2SL-005	29C8	AGC Filter
C23	1500		TCC152-SP	SD500	D6-152	1WSD15	G2SL-005	29C8	1st V. IF Dec.
C24	1500		TCC152-SP	SU500	D6-152	1WSD15	G2SL-005	29C8	AGC Filter
C25	.33	200	TCP254-1					27M-P25	AGC Filter
C26	5000		TCC502-SP	BPD-005	DD-502	1DSD5	81L-005	29C1	RF Bypass
C27	1500		TCC152-SP	SU500	D6-152	1WSD15	G2SL-005	29C8	2nd V. IF Dec.
C28	1500		TCC152-SP	SU500	D6-152	1WSD15	G2SL-005	29C8	3rd V. IF Dec.
C29	5000		TCC502-SP	BPD-005	DD-502	1DSD5	81L-005	29C1	3rd V. IF Cathode
C30	470		TCC471-SP	BPD-00047	DD-471		5WST5	G2SK-470	IF Coupling
C31	5000		TCC502-SP	BPD-005	DD-502	1DSD5	81L-005	29C1	DAGC Dec.
C32	15	500	TCC150-8	1468-00005	TCE-1.4	5WSY9	GPIK-5	MS-55	V. Diode Filter
C33	.047	200	TCPM503-1	P288-047	DF-503	PTE485		27M-S47	Video Coupling
C34	.047	100	TCPM503-4	P288-047	DF-503	PTE485		27M-S47	Video Coupling
C35	4700		TCC472-S	S4700	D6-472	1DSD5	G2PM-0047	29C39	V. Amp. Cathode
C36	68				TCE-68		NPOM-68	39C9	Fixed Trimmer
C37	.22	600	TCPM254-4	684-25		GT6P25		27M-P25	Pic. Tube Cathode
C38	2.2		TCC2.2-7		TCE-2.2				S. IF Coupling
C39	.01	400	TCP103-4	P488-01	DE-103	PTE481	82L-01	27M-81	S. IF Decoupling
C40	.022	200	TCP223-4	P488-022	DF-503	PTE482		27M-S2	S. IF Cathode
C41 A	2000		TCC2-1	BPD-2X002	DD-2-202	1WSD2	812-3X002	29C5	Diode Load Cap
B	2000					1WSD2			Diode Load Cap
C42	1500		TCC152-SP	SD500	D6-152	1WSD15	G2SL-005	29C8	De-emphasis
C43	.002	600	TCP202-10	P688-002	D6-203	PTE5D2	G2PM-002	27M-D2	Audio Coupling
C44	.01	400	TCP103-4	P488-01	DE-103	PTE481	82L-01	27M-81	Audio Coupling
C45	.002	600	TCP202-10	P688-002	D6-203	PTE5D2	G2PM-002	67M-D2	De-emphasis
C46	.01	400	TCP103-4	P488-01	DE-103	PTE481	82L-01	67M-81	Audio Coupling
C47	.005	600	TCPM502-10	P588-005	D6-502	PTE5D5	81L-005	67M-D5	Output Plate
C48	.05	600	TCPM503-4	P688-05	DF-503	PTE5E5		67M-S5	Sync. Coupling
C49	100	500	TCM101-8	1468-0001	D6-101	5WST1	GPIK-100	17M-S1	Sync. Coupling
C50	390	500	TCM391-7	1468-0004	D6-391	5WST4	GPZK-390	19M-34	Sync. Amp. Cathode
C51	.002	600	TCPMD202-10	P688-002	D6-202	PTE5D2	GP2M-002	67M-D2	Integrator Net
C52	.005	600	TCPM502-10	P688-005	D6-502	PTE5D5	81L-005	67M-D5	Integrator Net
C53	.0047	600	TCPM502-11-SP	P588-0047	D6-472	PTE5D5	G2PM-0047	67M-D47	Vertical Osc. Grid
C54	.01	400	TCPM103-10	P488-01	D6-103	PTE481	82L-01	67M-81	Vertical Osc. Grid
C55	.05	600	TCPM503-10	P688-05		DF-503	PTE5E5	67M-S5	Vertical Discharge
C56	.22	600	TCPM254-10	684-25		GT6P25		67M-P25	Vertical Sweep Coupling
C57	82	500	TCM082-8	1469-0001	TCE-82	5RST1	GPIK-82	MS-31	Horiz. Sync. Coupling
C58	82	500	TCM082-8	1469-0001	TCE-82	5RST1	GPIK-82	MS-31	Horiz. Feedback

CAPACITORS (CONT.)

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: TELETONE PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CENTRALAB PART No.	REPLACEMENT DATA: CORNELL-DUBILIER PART No.	REPLACEMENT DATA: ERIE PART No.	REPLACEMENT DATA: SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C59	.047	600	TCPM503-4	P688-047	DF-503	PTE485		67M-S47	AFC Filter
C60	.47	200	TCPM474-1	P288-47		GT3P5		27M-P47	AFC Filter
C61	.022	400	TCPM223-4	P488-02	DF-203	PTE482		67M-S2	AFC Filter
C62	.05	600	TCPM503-10	P688-05	DF-503	PTE5E5		67M-S5	Horiz. AFC Plate
C63	180	1000	TCSM181-39	1469-HV-0002					Horiz. Osc. Grid
C64	.01	600	TCP103-10	P688-01		PTE6S1		67M-S1	Fixed Trimmer
C65	.22	600	TCPM254-10	684-25		GT6P25		67M-P25	Decoupling
C66	.001	1000	TCPM102-14-SP	P1068-001		PTE6D1		MS-D1	Horiz. Discharge
C67	.470	500	TCM471-7	1469-00025	D6-271	5R5T25	GP3K-270	MS-325	Horiz. Sweep Coupling
C68	.05	600	TCPM503-11	P688-05	DF-503	PTE5E5		67M-S5	Horiz. Output Screen
C69	.47	100	TCPM474-1	P288-47		GT3P5		27M-P47	Horiz. Output Cathode
C70	.035	1000	TCPM353-13	P1068-0033					Damper Filter
C71	.005	1000	TCPM503-13	P1068-005		PTE6S5		MB-S5	Damper Filter
C72	.01	600	TCPM103-10	P688-01	D6-103	PTE6S1	82L-01	67M-S1	Decoupling
C73	.002	600	TCPM202-10	P688-002	D6-202	PTE5D2	G2PM-002	67M-D2	Horiz. Sweep Coupling
C74	.15	600	TCM650-10	1469-HV-0000					Horiz. Sweep Coupling *
C75	.001	1000	TCPM-103-14-SP	P1068-001		PTE6D1		MB-D1	Fixed Trimmer
C76	.00033	12500				05			H. V. Filter
C77	.01	400	TCPM103-4-SP	P488-01	D6-103	PTE4S1	82L-01	4TM-S1	Line Filter
C78	.01	400	TCPM103-4-SP	P488-01	D6-103	PTE4S1	82L-01	4TM-S1	Line Filter

* Not used in all models.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: TELETONE PART No.	REPLACEMENT DATA: IRC PART No.	REPLACEMENT DATA: CLAROSTAT PART No.	REPLACEMENT DATA: CENTRALAB PART No.	INSTALLATION NOTES
R1A	1 MEG	½	TVC-524-D		RTV-62	38B-641	Contrast Control - Front
B	500KΩ	½					Brightness Control - Rear
R2A	500KΩ	½	TVC-526-D	Q3J-133	AG-50-Z	B-60-8	Volume Control
B	Shaft		Not req.	Not req.	F8-3	Not req.	Attach to R2A Per Instructions
C	Switch		Not req.	76-1	SWB	Not req.	Attach to R2A Per Instructions
R3A	1.5 Meg	½	TVC-523-D	(Concentrikit) B11-138 * B11-139 #	RTV-63		Vertical Hold Control - Front
B	5MΩ	½					Horizontal Hold Control - Rear
C	Shaft End			E-107 * E-108 #			Attach Per Instructions in "Concentrikit"
R4	500	½		W-50 #	43-50 #	VK-116	Horizontal Centering Control - Wire Wound
R5A	5000Ω	½	TVC-505-D	Q1J-114	AM-19-3	AK-10	Vertical Linearity Control
B	Shaft		Not req.	84Q	FK8-1/4	AK-1	Attach to R5A Per Instructions
R6A	2.5 Meg	½	TVC-504-ID	Q1J-239	AM-84-8	AK-33	Height Control
B	Shaft		Not req.	84Q	FK8-1/4	AK-1	Attach to R6A Per Instructions

* Additional parts to be used with "Concentrikit".
# Fashion shaft to duplicate original.

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: TELETONE PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES ALL RESISTORS ± 10% UNLESS OTHERWISE SPECIFIED
R7	1.8 Meg	20%	TRC-185-1	BTS-1.8Meg	AGC Network
R8	1.8 Meg	20%	TRC-185-1	BTS-1.8Meg	RF Amp. Grid
R9	1000Ω	20%	TRC-102-1	BTS-1000	RF Amp. Decoupling
R10	4700Ω	5%	TRC-472-3	BTS-4700-5%	Mixer Grid Coil Shunt
R11	100KΩ	20%	TRC-104-1	BTS-100K	Mixer Grid
R12	100KΩ	20%	TRC-104-1	BTS-100K	Mixer Decoupling
R13	27KΩ	20%	TRC-273-1	BTS-27K	Osc. Grid
R14	27KΩ	20%	TRC-273-1	BTS-27K	Osc. Grid
R15	47Ω	20%	TRC-470-1		Osc. Cathode
R16	1000Ω	20%	TRC-102-1	BTS-1000	Osc. Plate
R17	5.1Ω		TRC-51A-2		Parasitic Suppressor
R18	330Ω	20%	TRC-331-1	BTS-330	Decoupling
R19	330Ω	20%	TRC-331-1	BTS-330	AGC Network
R20	330Ω	20%	TRC-331-1	BTS-330	AGC Network
R21	22KΩ		TRC-223-2		1st Video IF Amp. Grid
R22	47Ω	20%	TRC-470-1		1st Video IF Amp. Cathode
R23	1000Ω	20%	TRC-102-1	BTS-1000	1st Video IF Amp. Decoupling
RQ4	330Ω	20%	TRC-331-1	BTS-330	AGC Network
R25	18KΩ		TRC-183-2	BTS-18K	2nd Video IF Transformer Shunt
R26	47Ω	20%	TRC-470-1		2nd Video IF Amp. Cathode
R27	1000Ω	20%	TRC-102-1	BTS-1000	2nd Video IF Amp. Decoupling
R28	22KΩ		TRC-223-2		3rd Video IF Transformer Shunt
R29	100Ω	20%	TRC-101-1	BTS-100	3rd Video IF Amp. Cathode
R30	1000Ω	20%	TRC-102-1	BTS-1000	3rd Video IF Amp. Decoupling
R31	1000Ω		TRC-102-2	BTS-1000	AGC Det. Diode Load
R32	120KΩ	20%	TRC-124-1	BTS-120K	AGC Det. Diode Load
R33	560KΩ		TRC-564-2	BTS-560K	AGC Network
R34	3900Ω		TRC-392-2	BTS-3900	Video Det. Diode Load
R35	1MEG		TRC-105-2	BTS-1MEG	Video Amp. Grid
R36	3300Ω		TRC-332-5	BTS-3300	Video Amp. Plate
R37	1Meg	20%	TRC-105-1	BTS-1Meg	Video Amp. Grid
R38	47Ω	20%	TRC-470-1		Video Amp. Cathode
R39	3300Ω		TRC-332-5	BTS-3300	Video Amp. Plate
R40	10KΩ	20%	TRC-103-1	BTS-10K	Contrast Control Shunt
R41	820Ω		TRC-821-2	BTS-820	Video Amp. Decoupling
R42	100KΩ		TRC-104-2	BTS-100K	Picture Tube Cathode
R43	47KΩ	20%	TRC-473-1	BTS-47K	Voltage Divider
R44	180Ω		TRC-181-2	BTS-180	Sound IF Amp. Cathode
R45	1000Ω		TRC-102-2	BTS-1000	Sound IF Amp. Decoupling
R46	15KΩ		TRC-153-2	BTS-15K	Sound IF Transformer Shunt
R47	220Ω		TRC-221-1	BTS-220	Balancing
R48	220Ω		TRC-221-1	BTS-220	Balancing
R49	15KΩ		TRC-153-3	BTS-15K	Ratio Det. Diode Load
R50	15KΩ		TRC-153-3	BTS-15K	Ratio Det. Diode Load
R51	5.1Ω		TRC-51A-1	BW-|-5.1	Ratio Det. Diode Filament
R52	47KΩ		TRC-473-1	BTS-47K	De-emphasis
R53	10Meg		TRC-106-1	BTS-10Meg	A.F Amp. Grid
R54	390KΩ		TRC-394-2	BTS-390K	A.F Amp. Plate
R55	470KΩ		TRC-474-1	BTS-470K	Output Grid
R56	1000Ω	2	TRC-102-8	BTB-1000	Output Decoupling
R57	1Meg	20%	TRC-105-1	BTS-1Meg	Sync. Sep. Grid
R58	15KΩ		TRC-153-5	BTA-15K	Sync. Sep. Plate
R59	3.9Meg	20%	TRC-395-1	BTS-3.9Meg	Sync. Amp. Grid

RESISTORS (CONT.)

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: TELETONE PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES
R60	6800Ω	20%	TRC-682-1	BTS-6800	Sync. Amp. Cathode
R61	22KΩ	20%	TRC-223-1	BTS-22K	Integrator
R62	8200Ω	20%	TRC-822-1	BTS-8200	Integrator
R63	1Meg		TRC-105-2	BTS-1Meg	Vert. Osc. Grid
R64	470KΩ		TRC-474-2	BTS-470K	Vertical Osc. Plate
R65	4700Ω	5%	TRC-472-3	BTS-4700-5%	Vertical Peaking
R66	2.2Meg		TRC-225-2	BTS-2.2Meg	Vertical Output Grid
R67	820Ω		TRC-821-2	BTS-820	Vertical Output Cathode
R68	1000Ω		TRC-102-2	BTS-1000	Vertical Output Decoupling
R69	330KΩ		TRC-334-2	BTS-330K	Horizontal AFC Grid
R70	820KΩ		TRC-824-2	BTS-820K	Horizontal AFC Grid
R71	82KΩ	5%	TRC-823-6	BTA-82K-5%	Damper Filter
R72	100KΩ	5%	TRC-104-6	BTA-100K-5%	Horizontal AFC Plate
R73	3900Ω		TRC-392-2	BTS-3900	Horizontal AFC Filter
R74	150KΩ	5%	TRC-154-8	BTA-150K-5%	Horizontal Osc. Grid
R75	330KΩ	5%	TRC-334-6	BTA-330K-5%	Bias Network
R76	82KΩ	5%	TRC-823-6	BTA-82K-5%	Horizontal Osc. Plate
R77	8200Ω		TRC-822-2	BTS-8200	Horizontal Osc. Coil Shunt
R78	10KΩ	20%	TRC-103-1	BTS-10K	Decoupling
R79	47Ω	20%	TRC-470-1		Parasitic Suppressor
R80	1Meg	20%	TRC-105-1	BTS-1Meg	Horizontal Output Grid
R81	100Ω	2	TRC-101-8	BW-2-100	Horizontal Output Cathode - Wire Wound
R82	5100Ω	5% 2			Horizontal Output Screen
R83	120KΩ	20% ½	TRC-124-1	BTS-120K	Decoupling
R84	120KΩ	20% ½	TRC-124-1	BTS-120K	Decoupling
R85	100KΩ	2	TRC-104-7	BTB-100K	Damper Filter
R86	100KΩ	1	TRC-104-5	BTA-100K	Acc. Anode Load
R87	100KΩ	1	TRC-104-5	BTA-100K	Acc. Anode Load
R88	22KΩ	20% ½	TRC-223-1	BTS-22K	Damper Load
R89	3.3Ω	2	TRC-3.3A-1		HV Rectifier Filament
R90	1Meg	20% 2	TRC-105-4		HV Filter
R91	250Ω	10	TRW-251-SP		Filter - Wire Wound
R92A	1125Ω	9.8	TRP-17-DA		Voltage Divider - Wire Wound
B	8200Ω	2.3			Voltage Divider - Wire Wound
C	650Ω	10.1			Voltage Divider - Wire Wound
R93	33Ω	1	TRC-330-5	BW-1-33	Voltage Divider
R94	82Ω	2	TRC-820-8	BW-2-82	Voltage Divider
R95	150KΩ	½	TRC-154-2	BTS-150K	Horizontal Feedback
R96	82KΩ	1	TRC-823-5	BTA-82K	Voltage Divider

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: TELETONE PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.
T1	117VAC ② 2.1A	720VCT 250ADC	5VAC ② 3A	6.3VAC ② 1.8A SEC. 4 6.3VAC ② 7A	TTR188-D	P8159 and P5014 ①	P-3067 ③	TP-360

① Mount beneath chassis.
③ Add series resistor to reduce plate voltage.

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING: DC RESISTANCE PRI.	RATING: DC RESISTANCE SEC.	REPLACEMENT DATA: TELETONE PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.	NOTES
T2	67Ω	108Ω	TTR181-3	A-8111	A-3000	TB0-1	Vertical Block Osc. Trans.
T3	430Ω	18Ω	TTR209-D		HV0-8		Horizontal Output Trans.
	Tap 42Ω	Taps 9Ω and 13.4Ω					
		SEC. 2					
T4	690Ω	8.4Ω	TR2189-D	A-8112	A-3036	TB0-5 ②	Vertical Output Trans.
T5A	11Ω		TTR223-D	DY-7	MDF-70		Horizontal Deflection Coil
B	83Ω						Vertical Deflection Coil

② Drill one new mounting hole.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: TELETONE PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.	INSTALLATION NOTES
T6	5000Ω	4Ω	390Ω	TTR-179D	A-3677	A-2930	R0-8	

SPEAKER

ITEM No.	RATINGS: FIELD RES.	RATINGS: V. C. IMP.	REPLACEMENT DATA: TELETONE PART No.	REPLACEMENT DATA: VIKING PART No.	REPLACEMENT DATA: QUAM PART No.	NOTES
SP1	3Ω	4Ω	TSP466-D	524	5A15	
	CONE DIA.	V. C. DIA.				
SP2	4 13/16"	9/16"				

PARTS LIST CONTINUED ON PAGE 15

PARTS LIST AND DESCRIPTIONS (Continued)

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA				INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE @ CURRENT 1000 ~/1	TELETONE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
L1	.260A	57Ω	1 Henry	TTR160-2D	C-2326 ①	C-1996 ①	TR-3300 ①	① Drill one new mounting hole.

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	TELETONE PART No.	MEISSNER PART No.	
L2	Ant. Coil	0Ω		TLF565-D		
L3	RF Coil	0Ω		TLF143-D		Channel 6
L4	RF Coil	0Ω		TLF130-D		Channel 5
L5	RF Coil	0Ω		TLF129-D		Channel 4
L6	RF Coil	0Ω		TLF129-D		Channel 3
L7	RF Coil	0Ω		TLF126-D		Channel 2
L8	Mixer Grid Coil	0Ω		TLF143-D		Channel 6
L9	Mixer Grid Coil	0Ω		TLF130-D		Channel 5
L10	Mixer Grid Coil	0Ω		TLF129-D		Channel 4
L11	Mixer Grid Coil	0Ω		TLF129-D		Channel 3
L12	Mixer Grid Coil	0Ω		TLF128-D		Channel 2
L13	Osc. Coil	0Ω		TLF120-10		Channel 13
L14	Osc. Coil	0Ω		TLF120-10		Channel 11 and 12
L15	Osc. Coil	0Ω		TLF120-9		Channel 9 and 10
L16	Osc. Coil	0Ω		TLF120-6		Channel 7 and 8
L17	Osc. Coil	0Ω		TLF120-5		Channel 5 and 6
L18	Incremental Coil	0Ω		TLF541-D		Channel 5
L19	Osc. Coil	0Ω		TLF120-3		Channel 3 and 4
L20	Incremental Coil	0Ω		TLF542-D		Channel 3
L21	Incremental Coil	0Ω		TLF542-D		Channel 3
L22	Osc. Coil	0Ω		TLF120-1		Channel 2
L23	RF Choke	2.8Ω		TLF146-D		
L24	1st Video IF	.8Ω		TLF550-D		
L25	Fil. Choke	0Ω		TLF520-D		
L26	Fil. Choke	0Ω		TLF520-D		
L27	2nd Video IF	.4Ω	.4Ω	TLF567-D		
L28	Fil. Choke	0Ω		TLF520-D		
L29	3rd Video IF	2Ω	.2Ω	TLF568-D		
L30	Fil. Choke	0Ω		TLF520-D		
L31	4th Video IF	.4Ω	.4Ω	TLF567-1D		
L32	Peaking Coil	2.8Ω		TLF146-D		15 Microhenries
L33	Peaking Coil	6.8Ω		TLF135-D	19-1921 ①	180 Microhenries - Wound on 22KΩ Resistor (Green Dot)
L34	Peaking Coil	6.8Ω		TLF135-D	19-1921 ①	180 Microhenries - Wound on 22KΩ Resistor (Green Dot)
L35	Peaking Coil	6.8Ω		TLF135-D	19-1921 ①	180 Microhenries - Wound on 22KΩ Resistor (Green Dot)
L36	Peaking Coil	9.6Ω		TLF562-D	19-1923	350 Microhenries (Red Dot)
L37	4.5MC Trap	1.4Ω		TLF570-D		
L38	Peaking Coil	5.5Ω		TLF502-D	19-1921 ①	120 Microhenries - Wound on 22KΩ Resistor (Blue Dot)
L39	Sound IF	1Ω		TLF114-D		
L40	Ratio Det. Trans.	5.5Ω	2Ω	TLF531-D		
L41	Horiz. Osc. Trans.	85Ω	54Ω	TLF566-D		
L42	Horiz. Lin Coil	28Ω		TLF533-D		
L43	Width Coil	34Ω		TLF506-DA		

① Parallel with 22KΩ Resistor.

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA				REMARKS
			TELETONE PART No.		LITTELFUSE PART No.		
			FUSE	HOLDER	FUSE	HOLDER	
M1	3AG Pig Tail	.025			318.250		

MISCELLANEOUS

ITEM No.	PART NAME	TELETONE PART No.	NOTES
M2	RF Tuner		
M3	Switch	TSW-201	Width
M4	Switch		TV-Phono
M5	Focus Magnet	TPM10DA	
M6	Ion Trap		
R2, R3	Trimmer	TAS541-D	Dual (Horizontal Lock 4-70MMF) Horizontal Drive 10-160MMF)
	Knob	TKN117-D	Channel Selector
	Knob	TKN116-D	Dual
	Knob	TKN115-D	Inside
	Knob	TKN114-D	Outside
	Escutcheon	TMS121-R	
	Safety Glass	TGL162-D	
	Mask	TMS985-D	

WEBSTER-CHICAGO
MODEL 100

WEBSTER-CHICAGO
MODEL 100

GENERAL INFORMATION

The Webster-Chicago Model 100 is a three-speed, single-post changer designed to play automatically up to a one-inch stack of 7'', 10'' or 12'' records at speeds of 33-1/3, 45 or 78 RPM. The pickup arm will return to its rest position after completing the last record. The turntable will continue to rotate until the speed-selector lever is moved to the nearest "Off" position. The idler wheel is also pulled away from the motor shaft when the speed-control lever is in an "Off" position, eliminating the possibility of a flat spot developing on the rubber wheel. Two "Off" positions are available for ease of operation. Manual operation is also provided to play warped, home recordings, or records that do not have lead-in or tripping grooves.

The motor is designed to operate on 105-120 volts, 60 cycles, AC only.

Manufactured by:

Webster-Chicago Corporation
5610 Bloomingdale Avenue
Chicago 39, Illinois

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OPERATING INSTRUCTIONS

Automatic Operation -

1. Lift the record ballast arm (3) and swing it away from the spindle until it snaps into a locked position. The automatic index finger will also follow this outward movement.

2. Place up to a 1'' stack of any one size of records on the spindle (1). Hold the records parallel to the turntable and swing the record ballast arm back to the spindle, allowing it to drop in position on top of the records. The indexing arm will stay in the outward position until the change cycle is started, at which time it moves in to contact the edge of the records.

3. Rotate the needle tip selector to the correct position for records being played.

4. Move the speed-selector lever (32) to the proper speed.

5. Push down on the "Rej." button (30) and release. This puts the changer into automatic operation, thus playing the entire stack of records.

To Reject a Record -

To reject any record while playing in the automatic position, push down on the "Rej." button.

Manual Operation -

1. To play records manually, lift the record ballast arm (3) and swing it outward; the index arm (4) will move outward with the ballast arm.

2. Turn the needle-selector knob to the correct position.

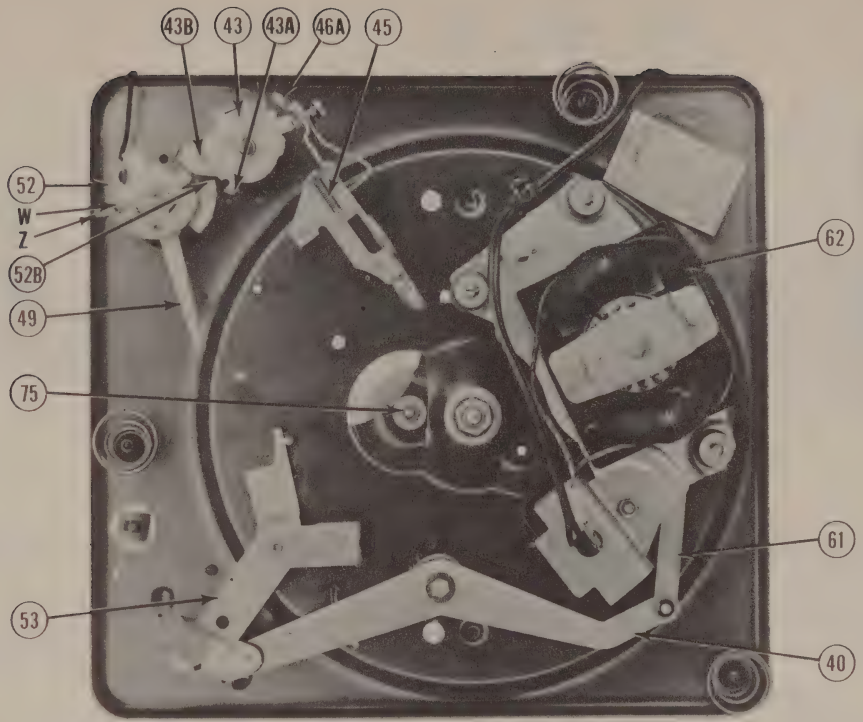
3. Move the speed-control lever (32) to the correct speed.

4. Place the record to be played on the turntable.

5. To stop the mechanism at any time, turn the speed-selector lever (32) to an "Off" position.

CHANGE CYCLE

As the pickup arm moves toward the center of the record, it carries the velocity trip arm (49) with it through the frictional condition set up by the clutch weight (42); this holds the trip arm against the pickup arm raising disc (52), which is fastened to the pickup arm shaft (13). The trip arm gradually approaches the velocity trip lever (69) and, upon contact, carries the lever with it. However, the main cam actuating gear (56) has four equally spaced projections on its circumference which strike the velocity trip roller as the gear revolves. This forces the velocity trip arm (49) and the velocity trip lever (69) back away from the tripping point. This does not affect the pickup arm because of the friction clutch. When the needle enters the eccentric groove of the record, the velocity trip arm (49) moves at such speed that it carries the velocity trip lever (69) to the tripping point between the projections on the main gear. This releases the actuating pawl (68A)



on the main cam assembly (68), allowing it to engage the main actuating gear (56) and drive it through the change cycle.

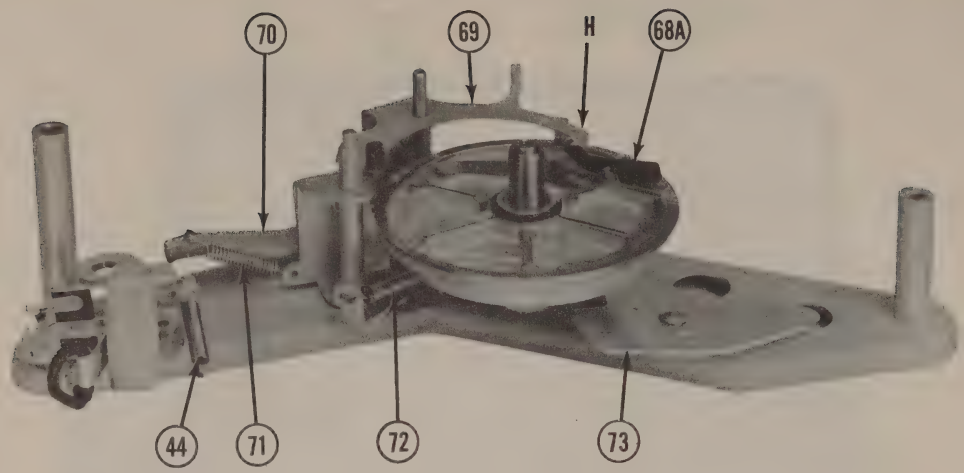
The main cam (68) has two cam surfaces on its lower side. The inside cam surface forms a track in which the stud of the pickup arm raising lever (70) rides. The outer cam surface actuates the cam lever (46) by means of the cam lever roller. As the cam rotates, the pickup arm raising lever pushes up on the pickup arm raising disc (52), lifting the pickup arm from the record. The stud of the pickup arm raising lever is now moved toward the center of the cam. As the raising lever moves, it engages a notch in the raising disc (52), moving the pickup arm out clear of the record stack. When the pickup arm stops at its most outward position, the raising lever (70) continues somewhat. By this action, the raising lever (70) engages the 7'' set-down notch on the raising disc (52).

As the cam continues to rotate, the roller of the cam lever (46) moves up the incline of the cam (68), causing the arm of the lever (46) to engage the spindle actuating lever (73), which in turn actuates the spindle assembly (1) thus dropping a record to the turntable. At the same time the cycle stop arm (46A), Figure 3, contacts one of the notches in set-down disc assembly (43), which has been pre-set by the index finger arm (4) contacting the edge of the record. This operation indexes the pickup arm for proper set-down. With continued rotation of the cam, the raising lever (70) swings the pickup arm inward until the stop disc (52B) on the raising disc engages the indexing ear (43B), see Figure 3.

By this engagement, the raising lever (70) will slip to either the 10'' or 12'' notch on the raising disc, depending on which notch the cycle stop arm (46A) has engaged. The raising lever (70) is then set for 10'' or 12'' set-down. For 7'' set-down, the raising lever (70) engages the 7'' notch on the raising disc each time the tone arm swings to its maximum outward position, and the set-down disc assembly (43) is positioned by cycle change stop (46A) to the point where it does not interfere with the movement of the raising disc (52). The pickup arm is then moved in for set-down.

As the cam continues to rotate, the tone arm is lowered to the record and the cam lever (46) is returned to its normal position.

The hook on the velocity trip and roller assembly (69) catches the trip dog (68A), disengages the main cam (68) from the cam-actuating gear (56) at the end of the change cycle. When the last record is dropped to the turntable, the index finger arm (4) moves all the way in to the ballast arm which, in turn, rotates the set-down disc assembly (43). Therefore, after the last record is played and the change cycle is put into operation, the flange (52B) on raising disc en-



gages the finger (43A) of the set-down disc (43), preventing the pickup arm from moving in over the records. As a result, the pickup then comes to a rest on the arm rest (28). The motor continues to revolve until the selector lever (32) is moved to an "Off" position.

ADJUSTMENTS

Pickup Arm Height -

The vertical movement of the pickup arm is controlled by the angle of the pickup raising lever (70). Correctly adjusted, the needle should clear the top record of a one-inch stack of records by approximately 1/16''.

1. Place a one-inch stack of 10-inch records on the turntable.

2. Press the "Reject" button (30) and rotate the turntable clockwise, by hand, until the needle approaches the stack of records.

CAUTION: Be sure the raising lever (70) engages the notch in the raising disc (52).

3. If the clearance between the needle and the top record is not approximately 1/16'', adjust by holding the pickup arm raising lever (70) at point "X" and bending the "Y." as indicated in Figure 5.

CAUTION: Make all adjustment bends slowly, using slight, but firm, pressure. Be careful to bend only up and down, not across the lever. Be sure the set screws in the raising disc are not loose.

Needle Set-Down -

Normally, the needle set-down is adjusted by means of the eccentric adjustment screw (10) in the hinge (9). This screw may be reached through a hole in the top of the pickup arm. Turn this screw clockwise to index the needle toward the spindle, and counter-clockwise to index the needle away from the spindle.

Should further adjustment be necessary, proceed as follows:

1. Place a one-inch stack of 10-inch records on the turntable and check the pickup arm height - see "Pickup Arm Height." This adjustment must be made first, as bending the raising lever (70) may affect the set-down point.

2. Remove the records from the turntable and then place a 7-inch record on the spindle.

3. Replace the ballast arm (3) over the spindle, allowing it to come to a rest on the record.

4. Move the index arm (4) in to engage the record.

5. Turn the eccentric adjustment screw (10) to a neutral position.

6. Press on the "Rej." button, then rotate the turntable clockwise until the pickup arm is in its most outward position. In this position, the raising lever (70) should engage the 7'' notch on the raising disc (52). This notch is the closest to the outside of the baseplate. If the raising lever (70) does not engage the 7'' notch on the raising disc (52), bend ear "Z" of (52) so the ear just touches the stud of the subframe and forces the raising lever to engage the notch properly.

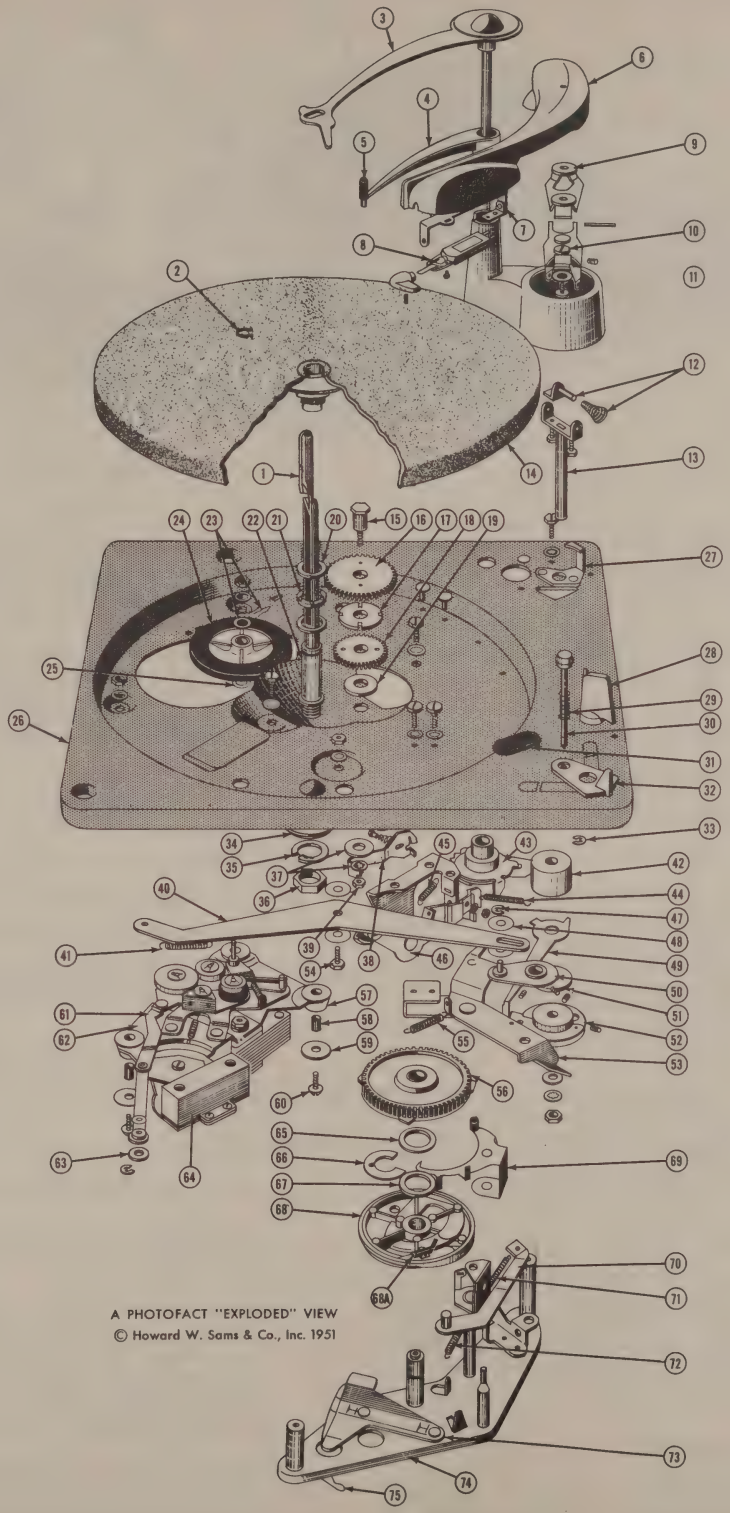
7. Complete the change cycle by rotating the turntable by hand.

8. Raise and place the pickup arm on its rest (28).

9. Remove the 7'' record and place a 10'' record on the spindle. Lower the arm ballast (3) and move the index arm (4) in against the record.

10. Press on the "Rej." button (30) and rotate the turntable, by hand, until the pickup arm starts to lower to the record.

11. If the needle is not above the starting



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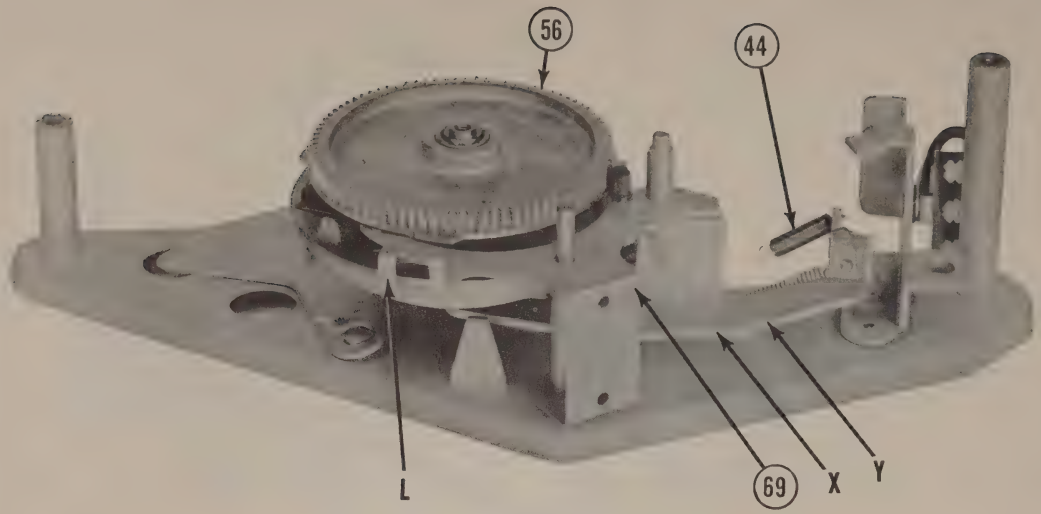


groove of the record, check to see if the raising lever (70) engages the 10" notch of the raising disc (52). If it is not engaged, loosen screw "W" (see Figure 3). Then move the pickup arm so that the raising lever will engage the 10" notch. Now move the stop disc (52B) until it touches the 12" index adjusting ear (43B); then tighten the screw.

12. If, after this adjustment has been made, the set-down point is still off, use two No. 6 Bristol wrenches and adjust the screws until the pickup arm is properly positioned. These two screws have pointed ends which fit into the "Off center" holes in the shaft (13). This adjustment should also be correct for 12" records.

Spindle Adjustment -

If the spindle push-off finger fails to release a record, turn the spindle adjusting nut (75) (see Figure 3) 1/4 turn counterclockwise out of the spindle to make the spindle actuating rod slightly longer. If the bottom record still does not drop, continue turning the adjusting nut counterclockwise, 1/4 turn at a time, until the record is pushed off.

CAUTION: If the actuating rod is turned out too far, the cam (46) will not be able to complete its motion and the changer will stall in cycle. When a change cycle has been completed, there should be very slight play at both ends of the rocker lever (73).

Automatic Trip Clutch Friction -

The clutch collar (42) supplies enough weight to operate the trip clutch mechanism. No oil or grease should be used on the clutch mechanism as this may prevent the clutch from operating properly. However, if foreign material, oil or grease comes in contact with these parts, clean them with carbon tetrachloride.

Needle Pressure Adjustment -

1. Unsnap the pickup arm hinge (9) and raise the arm to a vertical position.

2. Insert a small steel rod in the hole of the spring mounting stud (12) (see "Exploded View"). Turn the mounting stud downward to increase, or upward to decrease the needle pressure.

CAUTION: A slight movement of the stud is usually enough. An accurate gauge is necessary to insure correct needle pressure. Most cartridges require 7 to 10 grams for proper tracking and best reproduction.

TROUBLES

Failure to Trip -

1. Velocity trip and roller (69) binding.

2. Trip dog (68A) on main cam binding.

3. Automatic trip arm (49) bent; therefore, the velocity trip and roller assembly (69) is not being contacted.

4. Turn down tab on velocity trip (69) which is bent up, thus allowing the trip arm (49) to pass under the trip (69).

Continuous Tripping -

1. Roller on velocity trip assembly (69) missing.

2. Too much clearance on hook (H) of trip (69) (see Figures 4 and 5).

(a) This hook should be adjusted for about 1/64" clearance from the bottom of main gear (56). Too much clearance may permit the cam pawl (68A) to bounce past the hook (H) and re-engage the cam (56), causing the mechanism to continue to cycle.

(b) If the clearance between lip (L) on the velocity trip lever (69) and the edge of the main cam (68) is too small, it will prevent

the hook end (H) of the trip lever (69) from engaging the trigger.

Adjust the clearance between the lip (L) and the main cam (68) to be within 1/64" when the roller is contacting one of the protrusions on the actuating gear (68).

Records Fail to Drop -

1. Spindle out of adjustment (see "Spindle Adjustment").

More than One Record Drops at a Time -

1. Center hole in records too large.

2. Spindle slide (1A) not fully down. If the spindle slide (1A) is not all the way down, more than one record may drop at a time. Check the slide to see that it is free and does not bind at any point.

3. Exceptionally thin records.

Slide-In or Needle Skips Grooves -

Slide-in is where the needle will touch the first groove of the record properly but will jump the grooves forward or back, as though the needle pressure were too light.

1. Check the needle tip. The standard tip will be especially likely to jump grooves of a microgroove record. Be sure the microgroove tip is used for either 33-1/3 or 45 RPM records.

2. Chipped or damaged needle.

3. Tight pickup cord.

4. Needle pressure too light (see "Needle Pressure Adjustment").

Stalls During Cycle -

1. Grease or oil on turntable rim or rubber drive surfaces of the motor assembly. Clean with carbon tetrachloride.

2. Spindle out of adjustment (see "Spindle Adjustment").

3. Check for low line voltage.

LUBRICATION

Lubrication applied at the time of manufacture is usually sufficient for a long period of time. However, should it become necessary to relubricate, due to extreme conditions of dust, heat, excessive use, or the replacement of new parts, the mechanism should be cleaned with carbon tetrachloride and lubricated as follows:

A - No. 10 Oil (apply with small oil can or medicine dropper).

1. Motor bearings.

2. Pickup arm shaft (13).

3. Ball bearing assembly (21).

4. Idler wheel felt.

B - Non-Fluid Lubricant (apply with small brush).

1. Idler wheel link.

2. Turntable shaft stud (22).

3. Pickup arm hinge pins.

4. Knife edge of pickup arm raising lever (70).

5. Teeth of main cam actuating gear (56).

6. Track of main cam gear (68).

7. Teeth of large (16) and small (18) idler gears.

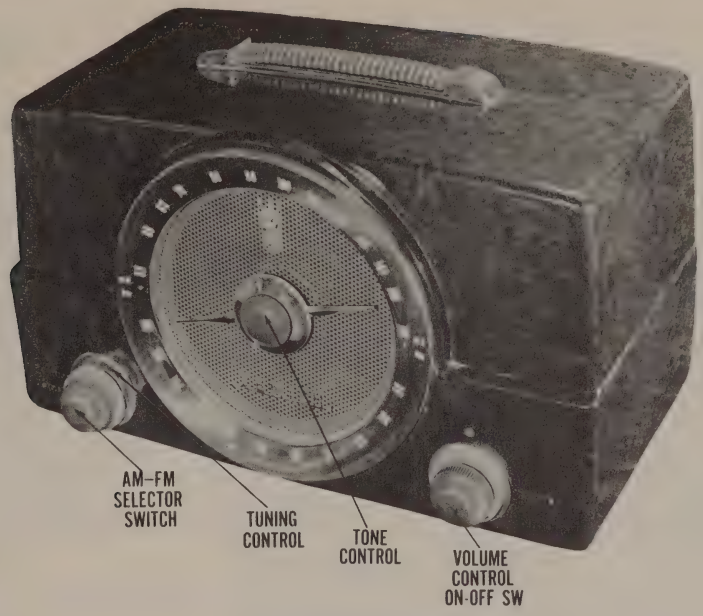
8. Raising lever bracket bearing surface.

9. Spindle adjusting nut at bottom.

PARTS LIST

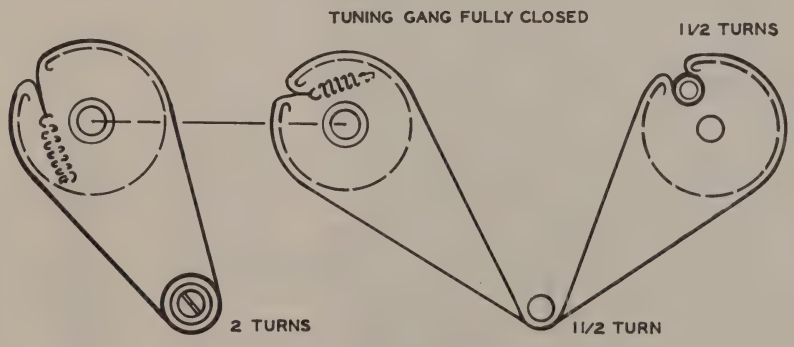
Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
1	11X558	Spindle	40	11X539	Speed Selector Arm
2	50P221	Retainer for Turntable	41	46P134	Tension Spring - Idler Link
3	11X550	Record Ballast Arm and Index Finger Assembly	42	41P576	Clutch Weight
			43	11X547	Set-Down Disc Assembly
	11X549	Record Ballast Arm	44	46P225	Tension Spring - Set-Down Disc
4	42X218	Index Finger Arm	45	46P017	Tension Spring for Cam Lever and Bracket
5	24P048	Index Finger Cushion			
6	49X123-X	Pickup Arm	46	11X546	Cam Lever and Bracket-Comp.
7		Cartridge Mounting Bracket	46A	45P921	Cycle Stop Arm
8		Cartridge	47	25P439	"C" Washer for Speed Selector Arm
9	21X283	Pickup Arm Hinge			
10		Pickup Arm Set-Down Adjustment Screw	48	25P046	Fiber Washer
			49	45P935	Velocity Trip Arm
11	42P219	Housing	50	11X540	Speed Selector Link and Hub
12	11X386	Pickup Arm Counter Balance	51	23P009	Felt Washer - Velocity Trip
13	11X385	Pickup Arm Shaft	52	11X552	Pickup Arm Raising Disc
14	11X138	Turntable	53	11X542	Reject Trip Lever
15	41P333	Shoulder Screw	54	41P747	Shoulder Screw for Speed Selector Arm
16	47P024	Idler Gear - Large			
17	45P342	Coupler	55	46P219	Tension Spring - Trip Lever
18	47P023	Idler Gear - Small	56	11X032	Main Actuating Gear
19	25P284	Washer	57	25P363	Motor Mounting Grommet
20	25P269	Washer - Bearing Race	58	41P592	Motor Mounting Sleeve
21	11X058	Turntable Bearing	59	25P367	Motor Mounting Washer
22	41P414	Turntable Stud	60	26P110	Motor Mounting Screw
23)	50P125	Idler Wheel Retaining Clip	61	17X481	Drive Wheel Mounting Plate and Cam
)	25P030	Felt Washer			
24	11X366	Idler Wheel	62	17X467	Motor and Top Bridge Assembly
25	25P046	Fiber Washer	63	25P030	Felt Washer for Speed Selector Arm
26		Baseplate			
27	45P191	Stop Bracket for Pickup Arm	64	32P054	A. C. Switch
28	49P099	Pickup Arm Rest	65	25P343	Washer for Main Cam Assembly
29	46P226	Compression Spring - Reject Button	66	25P342	"C" Washer for Main Cam Assembly
30	49X135	Reject Button			
31	24P004	Needle Pad	67	25P083	Washer for Main Cam Assembly
32	42X217	Speed Selector Lever	68	11X545	Main Cam Assembly
33	25P447	"C" Retainer for Reject Button	69	11X320	Velocity Trip
34	25P289	Cup Washer - Spindle Mounting	70	11X553	Pickup Arm Raising Lever
35	25P403	Lock Washer - Spindle Mounting	71	46P022	Tension Spring - Raising Lever
36	26P687	Nut - Spindle Mounting	72	46P221	Tension Spring - Raising Lever
37	25P284	Washer	73	45P909	Spindle Actuating Lever
	25P222	Lock Washer	74		Sub Frame
38	45P921	Cycle Stop Arm	75	50P204	Spindle Retaining Clip
39	26P046	Nut			

ZENITH
MODEL H725 (Ch. 7G01Z)



ZENITH MODEL H725 (CH. 7G01Z)

TRADE NAME	Zenith, Model H725 (Ch. 7G01Z)	
MANUFACTURER	Zenith Radio Corp., 6001 Dickens Ave., Chicago, Illinois	
TYPE SET	AC-DC Operated AM-FM Superheterodyne Receiver With Loop Antenna	
TUBES (SEVEN)	Types 12BA6 Or 6BJ6 RF Amp., 12AT7 Converter, 12BA6 1st IF Amp., 12BA6 2nd IF Amp., 12AU6 Limiter, 19T8 Det. AVC-AF, 35B5 Power Output	
POWER SUP PLY	110-120 Volts AC-DC	RATING .325 Amp. @ 117 Volts AC
TUNING RANGE-BROADCAST	540-1620KC	FREQ. MOD. 88-108MC



DIAL CORD DRIVE

HOWARD W. SAMS & CO., INC. • Indianapolis 1, Indiana

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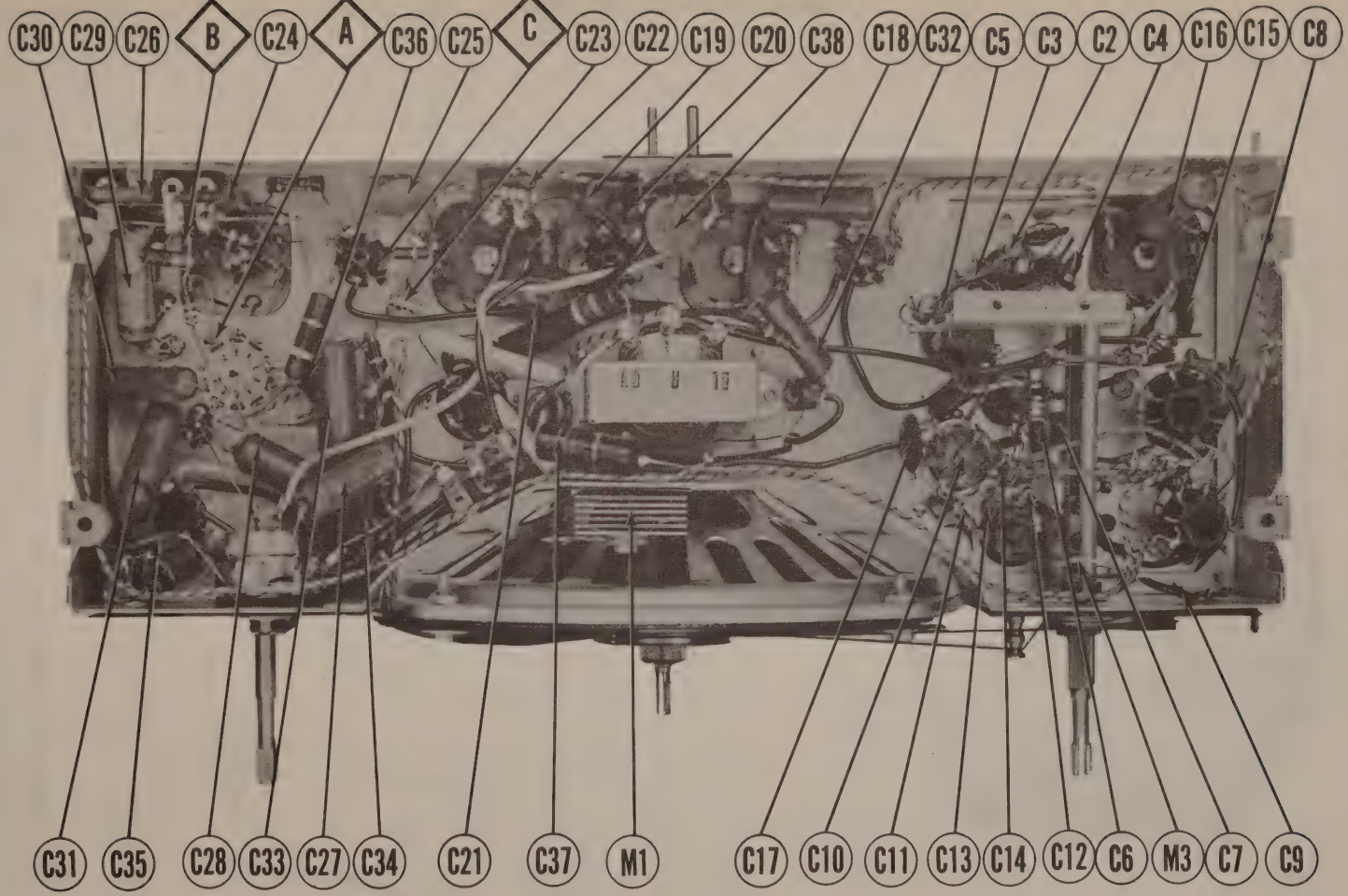
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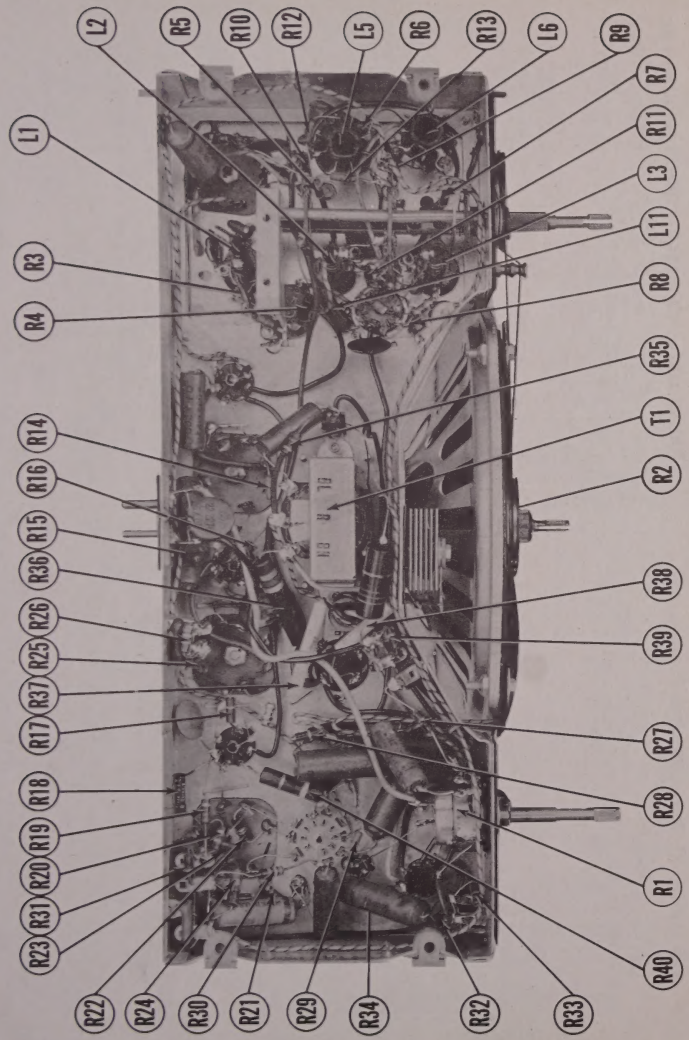

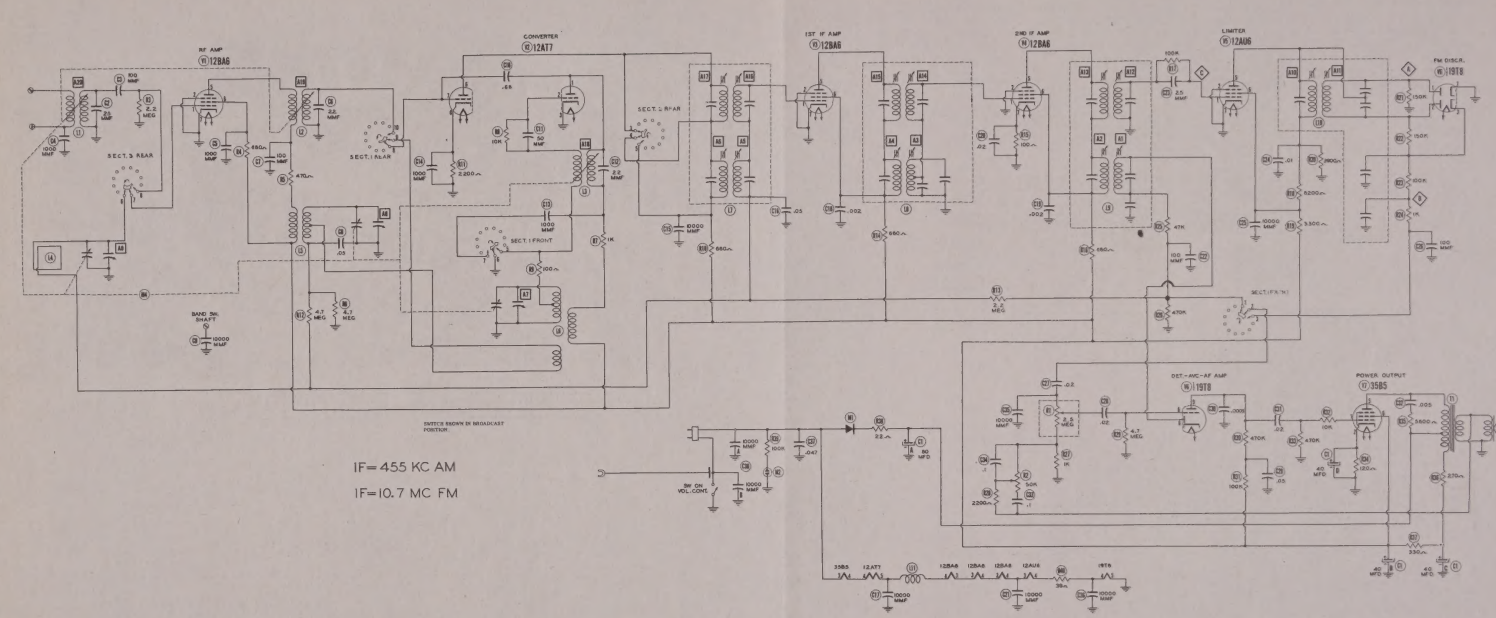

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer, turn tuning gang fully closed and set the pointer horizontal.
Use isolation transformer if available. If not, connect a .1MFD capacitor in series with low side of signal generator and chassis.

AM ALIGNMENT

Loop should be maintained in same relative position to chassis as when receiver is in cabinet.
Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.05MFD	High side to Pin 7 (grid) of 12AT7 (V2). Low side to chassis.	455KC (400 % Mod.)	AM (CCW)	Tuning gang fully closed.	Across voice coil	A1, A2, A3, A4, A5, A6	Adjust for maximum output.
2.		Loop	1620KC	"	Tuning gang fully open.	"	A7	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for max. output.
3.		Loop	1400KC	"	Tune for max. output.	"	A8, A9	"

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
4.	.05MFD	High side to Pin 1 (grid) of 12AU6 (V5). Low side to chassis.	10.7MC (Unmod.)	FM (CW)	Tuning gang fully open.	DC probe thru 2 meg to Point Ⓓ Common to chassis.	A10	Adjust for maximum deflection.
5.	"	"	"	"	"	DC probe to Point Ⓓ Common to chassis.	A11	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.
6.	"	High side to Pin 1 (grid) of 12BA6, (V4). Low side to chassis.	"	"	"	DC probe thru 2 meg to Point Ⓓ Common to chassis.	A12, A13	Adjust for maximum deflection.
7.	"	High side to Pin 1 (grid) of 12BA6, (V3). Low side to chassis.	"	"	"	"	A14, A15	"
8.	"	High side to Pin 7 (grid) of 12AT7, (V2). Low side to chassis	"	"	"	"	A16, A17	"

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Connect a 47KΩ decoupling resistor in series with the oscilloscope vertical input lead.
Use frequency modulated signal with 60 % modulation and 450KC sweep. Use 120 % sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	SCOPE CONNECT	ADJUST	REMARKS
4.	.05MFD	High side to Pin 1 (grid) of 12BA6, (V4). Low side to chassis.	10.7MC (450KC SWP)	FM (CW)	Point of non-interference	Vert. amp. thru 47KΩ to Point Ⓓ Low side to chassis.	A12, A13	Adjust for maximum amplitude and symmetry as per figure 1.
5.	"	High side to Pin 1 (grid) of 12BA6, (V3). Low side to chassis.	"	"	"	"	A14, A15	"
6.	"	High side to Pin 7 (grid) of 12AT7, (V2). Low side to chassis.	"	"	"	"	A16, A17	"
7.	"	"	"	"	"	Vert. amp. to Point Ⓓ Low side to chassis.	A10, A11	Adjust A-11 so 10.7MC occurs at center of crossover lines as per figure 2. Adjust A10 for max. amplitude and straightness of crossover lines. Continue with step 9.

FM RF ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
9.	300Ω carbon resistor	High side thru 300Ω thru 2 meg to "FM" antenna terminal. Low side to "G".	10.7MC (Unmod.)	FM	Tuning gang fully open.	DC probe thru 2 meg to Point Ⓓ Common to chassis.	A18	Adjust for maximum deflection.
10.	"	"	98MC	"	Tune for max. deflection.	"	A19, A20	"

10.7 MC

FIG. 1

10.7MC

FIG. 2

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA ZENITH PART No.	REPLACEMENT DATA STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
V1A	RF Amplifier	12BA6	12BA6	7BK	
B	1st Mixer-Oscillator Converter	12BA6	12BA6	7BK	
V2	1st IF Amplifier	12AT7	12AT7	9A	
V3	2nd IF Amplifier	12BA6	12BA6	7BK	
V4	3rd IF Amplifier	12BA6	12BA6	7BK	
V5	Limiter	12AU6	12AU6	7BK	
V6	Discriminator-AM Det.-1st AF Amp.	19T8	19T8	9E	
V7	Power Output	35B5	35B5	7BZ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

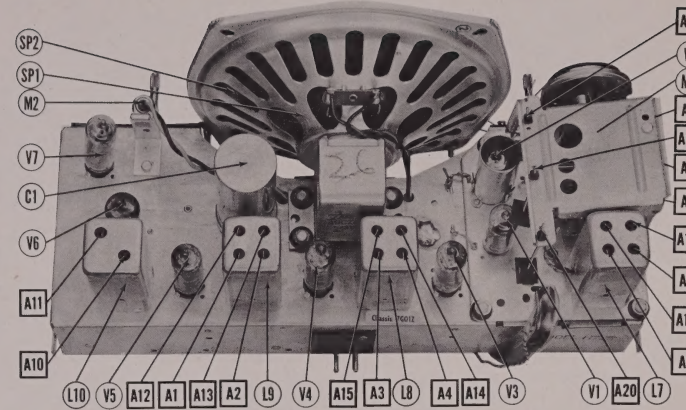
ITEM No.	RATING VOLT	REPLACEMENT DATA ZENITH PART No.	REPLACEMENT DATA ARROWOX CENTRALAB PART No.	REPLACEMENT DATA DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES INSTALLATION NOTES
C1A	80	22-1661					▪ Filter
B	40						▪ Filter
C	40						▪ Filter
C2	25	22-2060	S100	DA-101	9W3T1	GP1K-103	36C11	Output Cathode
C3	100	22-1678	S1000	DA-102	9W3D1	GP2L-103	19C1	Fixed Trimmer
C4	1000	22-1676	S1000	DA-102	9W3D1	GP2L-102	19C1	Fixed Trimmer
C5	1000	22-1676	S1000			Type 1-1210	19C1	Ant. Isolation
C6	22	22-1706	S100		9W3T1	GP1K-101	19C1	RF Amp. Screen
C7	.05	22-829	P88-05	DP-503	PTE5R5		19C1	Fixed Trimmer
C8	.05	200	22-829	P88-05	DP-503	PTE5R5	821-01	27M-S5	AVC Filter
C9	1000		22-1676	S1000	DA-102	9W3D1		19C1	Fixed Trimmer
C10	.05	200	22-1766	BPD-01	DP-503	PTE5R5	821-01	27M-S5	AVC Filter
C11	50		22-1387	S100	DA-500	5W5Q5	GP1K-500	19C28	Osc. Coupling
C12	100		22-1676	S1000			Type 1-1210		Osc. Grid Cap
C13	1000		22-1678	S1000	DA-102	9W3D1		19C1	Fixed Trimmer
C14	1000		22-1676	S1000	DA-102	9W3D1	GP2L-102	19C1	FM Osc. Dec.
C15	1000		22-1678	S1000	DA-102	9W3D1	821-01	19C1	Conv. Cathode
C16	.05	200	22-829	P88-05	DP-503	PTE5R5		27M-S5	Cathode Bypass
C17	10000		22-3	BPD-01	DD-103	PTE5R5		27M-S5	AVC Filter
C18	1000		22-1676	S1000	DA-102	9W3D1	821-01	19C1	Conv. Filament
C19	.002	600	22-1683	P88-02	DP-203	PTE5R5	GP2S-333-202	27M-S2	1st IF Decoupling
C20	.02	600	22-1920	P88-03	DP-203	PTE5R5	GP2S-333-203	27M-S3	2nd IF Decoupling
C21	.002	600	22-1683	P88-02	DP-203	PTE5R5		47M-S2	2nd IF Cathode
C22	.02	600	22-1920	P88-03	DP-203	PTE5R5		47M-S3	1st IF Cathode
C23	100		22-5	S100	DA-101	9W3T1	GP1K-101	19C11	Diode RF Filter
C24	25	200	22-1017	S25	DA-250	9W3Q5	GP1K-250	47M-S1	IF Coupling
C25	10000		22-3	BPD-01	DD-103	PTE5R5	821-01	36C1	Limiter Plate Dec.
C26	100	200	22-5	S100	DA-101	9W3T1	GP1K-101	36C1	Limiter Screen
C27	10000		22-3	BPD-01	DD-103	PTE5R5		36C1	Grid Leak
C28	.02	400	22-1683	P88-02	DP-203	PTE5R2		27M-S2	Audio Coupling
C29	.02	400	22-1683	P88-02	DP-203	PTE5R2		47M-S2	Audio Coupling
C30	.005	600	22-859	488-0005	DP-503	9W3T5	GP2K-501	27M-S5	2nd Det. Plate
C31	.02	600	22-1683	P88-02	DP-203	PTE5R2		47M-S2	AF Amp. Plate
C32	.005	600	22-1684	P88-0005	DP-104	PTE5R5	811-005	27M-S5	Audio Coupling
C33	.005	300	22-2084	P288-1	DP-104	PTE5R5		27M-P1	Tone Comp.
C34	.1	300	22-2084	P288-1	DP-104	PTE5R5		27M-P1	Tone Comp.
C35	10000		22-3	BPD-01	DD-103	PTE5R5	821-01	36C1	Vert. Deflection
C36	10000		22-3	BPD-01	DD-103	PTE5R5	821-01	36C1	Discr.-AF Amp. Fil.
C37	.047	400	22-1775	P488-047	DP-503	PTE5R5		47M-S47	Line Filter
C38	10000		22-2276	BPD-01	DD-103	PTE5R5	821-01	36C1	Line Filter
B	10000			BPD-01	DD-103	PTE5R1	821-01	36C1	Line Filter

* Some models use .01MFD in this application.

CONTROLS

ITEM No.	RATING RESIST.	RATING WATTS	REPLACEMENT DATA ZENITH PART No.	REPLACEMENT DATA IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	2.5Meg	1	63-1584	Q13-139	AM-66-2	AS-76	Volume Control
B	Shaft		Not req.	Not req.	488-3	A-15	Attach to R1A Per Instructions
C	500Ω		63-2107	TR-1	AM-65	AS-201	Tone Control
R2	50KΩ	↓	63-2108				

SET 135 FOLDER 15



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA ZENITH PART No.	REPLACEMENT DATA IRC PART No.	IDENTIFICATION CODES
R3	2.2Meg	↓	63-1828	BTS-2.2Meg	FM RF Amp. Grid
R4	680Ω		63-1779	BTS-680	FM RF Amp. Screen
R5	4.7Meg		63-1772	BTS-4.7Meg	FM RF Amp. Plate Decoupling
R6	4.7Meg		63-1940	BTS-4.7Meg	Converter Grid
R7	10000		63-1985	BTS-1000	Osc. Decoupling
R8	680Ω		63-1779		Osc. Grid
R9	10Ω		63-1744		Parasitic Suppressor
R10	680Ω		63-1779	BTS-680	Converter Plate Decoupling
R11	4.7Meg		63-1772	BTS-4.7Meg	1st IF Grid Return
R12	4.7Meg		63-1940	BTS-4.7Meg	AVC Network
R13	2.2Meg		63-1828	BTS-2.2Meg	1st IF Amp. Decoupling
R14	680Ω		63-1779	BTS-680	2nd IF Amp. Cathode
R15	10Ω		63-1744	BTS-10	2nd IF Amp. Decoupling
R16	680Ω		63-1779	BTS-680	1st IF Amp. Decoupling
R17	82000		63-1854	BTS-82K	Limiter Grid Leak
R18	82000		63-1854	BTS-82K	Limiter Plate Decoupling
R19	33000		63-1806	BTS-33K	Limiter Decoupling
R20	33000		63-1806	BTS-33K	Limiter Load
R21	150000		63-1876	BTS-150K	Disc. Diode Load
R22	150000		63-1876	BTS-150K	Disc. Diode Load
R23	150000		63-1876	BTS-150K	Disc. Diode Load
R24	10000		63-1985	BTS-1000	Tone Compensation
R25	47000		63-1898	BTS-47K	Diode Filter
R26	2.2Meg		63-1828	BTS-2.2Meg	Diode Load
R27	10000		63-1985	BTS-1000	Tone Compensation
R28	4.7Meg		63-1940	BTS-4.7Meg	AF Amp. Grid
R29	470KΩ		63-1898	BTS-470K	AF Amp. Plate
R30	470KΩ		63-1898	BTS-470K	AF Amp. Decoupling
R31	10MΩ		63-1838	BTS-10M	Output Grid
R32	10KΩ		63-1817	BTS-10K	Output Grid
R33	470KΩ		63-1898	BTS-470K	Tone Compensation
R34	56000		63-1877	BTS-56K	Tone Compensation
R35	2700		63-1452	BW-2-270	Filter - Wire Wound
R36	2700	2	63-1453	BW-2-270	Filter - Wire Wound
R37	250		63-1450	BW-1-25	Surge Limiter - Wire Wound
R38	100KΩ		63-1870	BTS-100K	Series Pilot Light
R39	10Ω		63-1454	BW-1-10	Filament Dropping - Wire Wound - See Note

Note: Not used in all models.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	RATING IMPEDANCE SEC.	REPLACEMENT DATA ZENITH PART No.	REPLACEMENT DATA STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
T1	5.3KΩ	2500 Ctp. 25Ω	98-1035	A-3330 ①	A-3331 ①	RO-3 ①	① Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS FIELD	RATINGS	REPLACEMENT DATA ZENITH PART No.	REPLACEMENT DATA JENSEN PART No.	QUAM PART No.	INSTALLATION NOTES
SP1	V. C. IMP.	3.3Ω		PT11 ②		
	PM		40-608	Mod. P8T	8A31 ②	② Drill and lap magnet frame to fit original mounting bracket.
	CONE DIA.	V. C. DIA.				
SP2	7 1/4"	9/16"				

PARTS LIST AND DESCRIPTIONS (Continued)

R F COILS

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA ZENITH PART No.	REPLACEMENT DATA MESSNER PART No.	NOTES
L1	FM Ant. Coil	.1Ω	.1Ω	8-1492		
L2	FM RF Coil	.1Ω	.1Ω	8-13743		
L3	FM Osc. Coil	.1Ω	.1Ω	8-13744		
L4	Loop Ant.	3.5Ω	13.5Ω	8-13977		
L5	AM RF Coil	3.5Ω	9Ω	8-13844		Secondary Tap @ 4Ω
L6	AM Osc. Coil	3.5Ω	9Ω	8-13845		Sec. Tap @ 4Ω
R7A	FM 1st IF	.6Ω	9Ω	8-15981		Sec. Resistance Includes AM Section
B	FM 2nd IF	9.5Ω				
L8A	AM 1st IF		9.5Ω	8-13971		Primary Resistance Includes AM Section
B	AM 2nd IF					
L9A	FM 3rd IF	9.5Ω	9.5Ω	8-13972		Primary Resistance Includes AM Section
B	FM 2nd IF					
L10	FM Disc.	.5Ω	.5Ω	8-13973		
L11	FM Choke	1.5Ω		8-13997		

SELENIUM RECTIFIER

ITEM No.	RATING CURRENT	REPLACEMENT DATA ZENITH PART No.	REPLACEMENT DATA SEMITRON PART No.	NOTES
M 1	087A	323-7	NC-5	

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	REPLACEMENT DATA BEAD COLOR	REPLACEMENT DATA ZENITH PART No.	NOTES
M 2	Bayonet	7.5	.3	White	TH-41	Type #51

MISCELLANEOUS

ITEM No.	PART NAME	ZENITH PART No.	NOTES
M3	Switch	85-594	AM-FM
M4	Dial Cord	83-1077	(M4-16108MF, 16-313AMF, 18-93AMF)
	Switch Var. Cap.	14-1350	
	Cabinet	20-1583	
	Dial Scale	26-445	
	Dial Pointer	46-537	
	Knob	46-539	Tuning
	Knob	46-718	Band
	Knob	46-585	Tone
	Knob	8-1439	Volume